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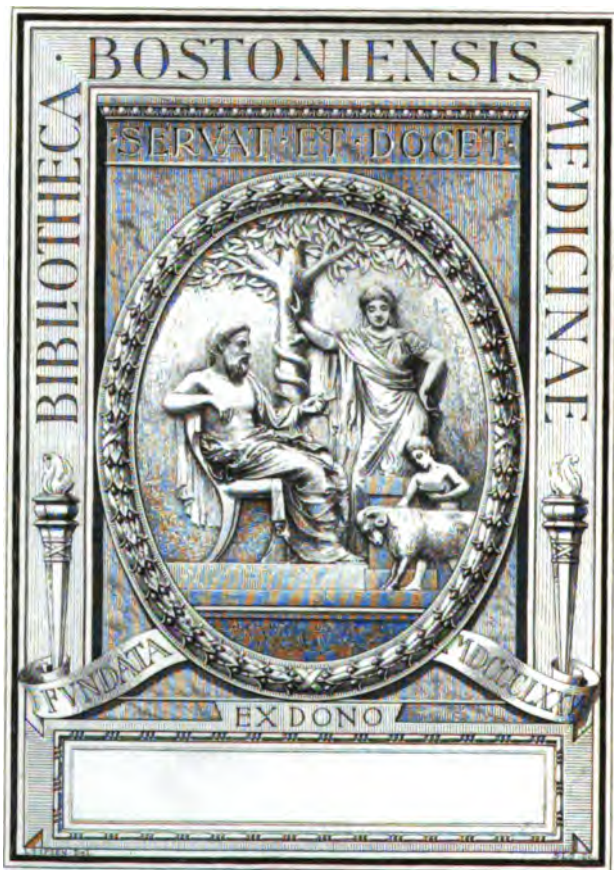
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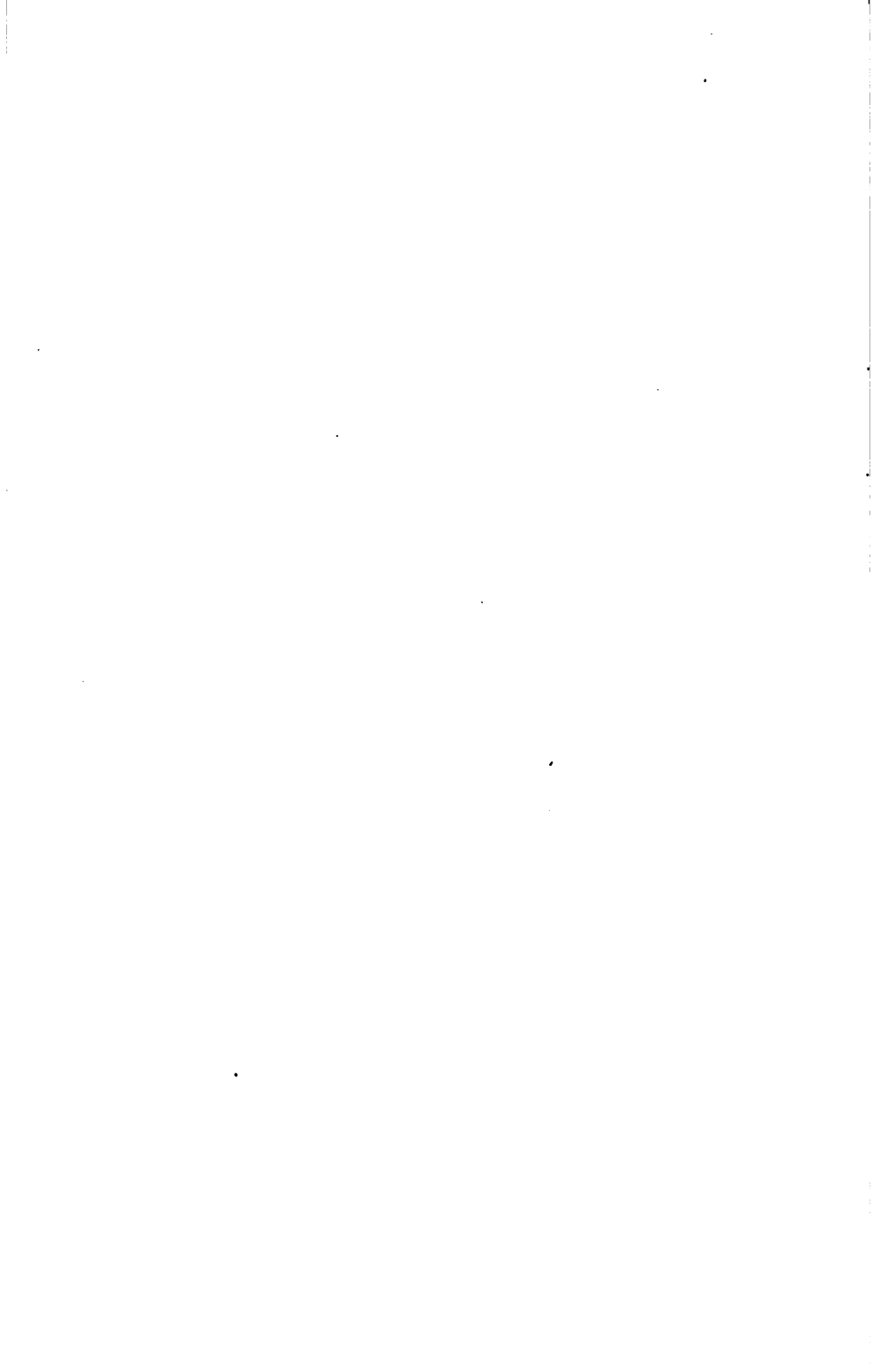


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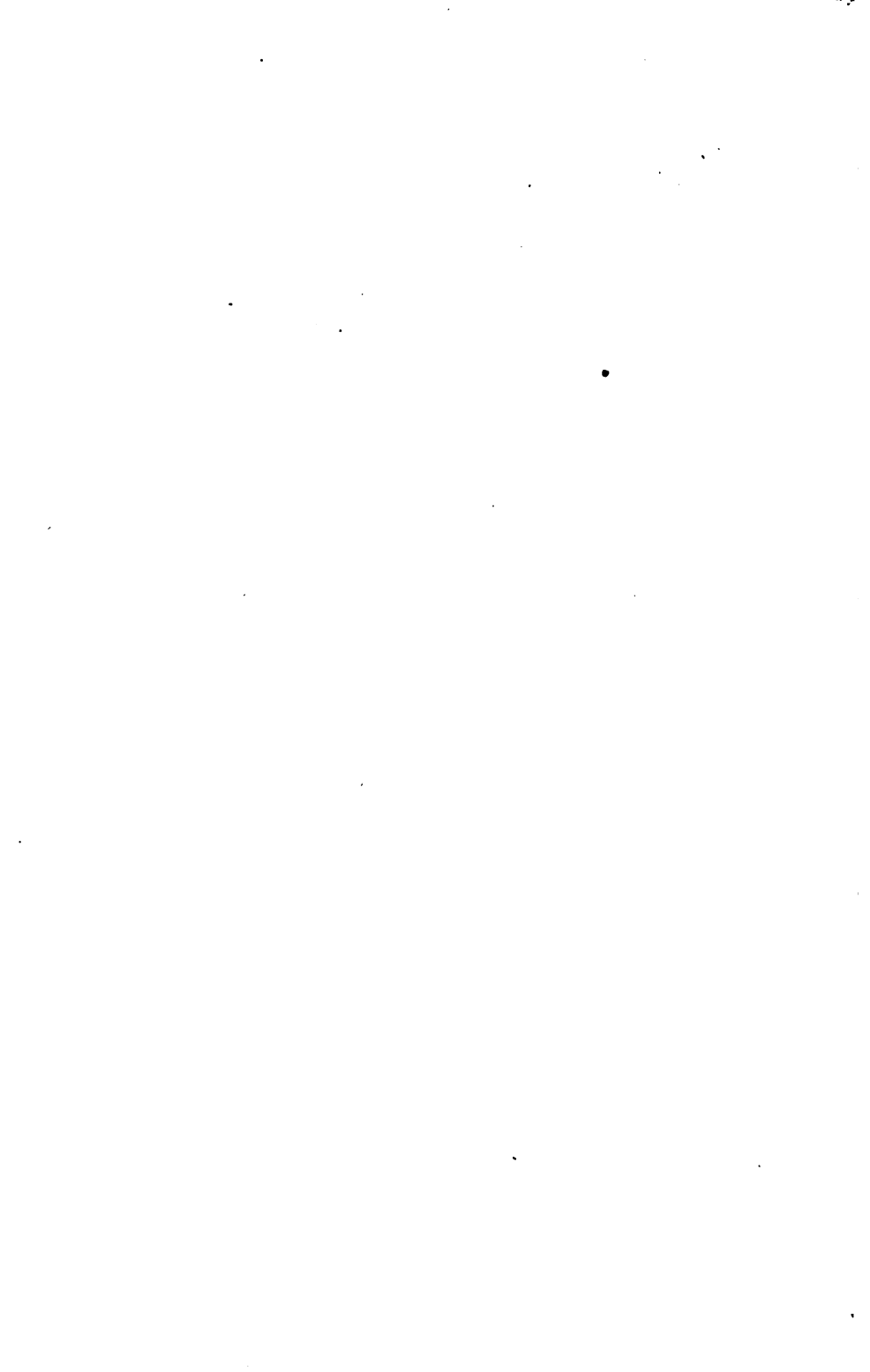












**THE**

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THOMAS KIRKPATRICK MONRO, M.D.,

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GEORGE HENRY EDINGTON, M.D.,

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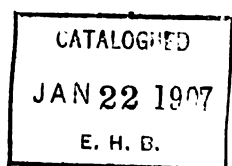
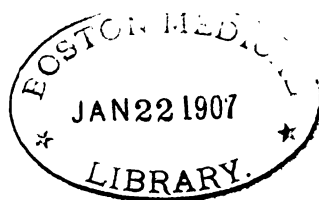
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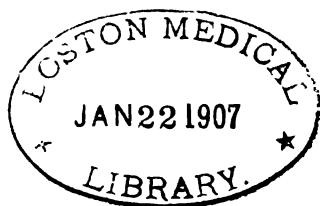
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# GLASGOW MEDICAL JOURNAL.

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## ORIGINAL ARTICLES.

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### THE DEFENSIVE POWERS OF THE BODY IN DISEASE.<sup>1</sup>

By ROBERT MUIR, M.D.,  
Professor of Pathology, University of Glasgow.

GENTLEMEN,—The subject of my address this evening has been suggested to me by a consideration of the developments in pathological science during recent years. It is an exceedingly wide one, and I can only attempt to deal with some of the important facts.

In the case of every tissue and organ in the body there is seen a power of working beyond the normal demands, a power of dealing with abnormal requirements. It is seen in the case of muscular, nervous, secretory, and excretory tissues, and is clearly of protective or defensive nature. The phrase *vis medicatrix naturæ* indicates that this view of the body functions has long been recognised also in the case of disease, but it is only within recent years, and especially as the result of bacteriological study, that we have come to see to how great an extent the so-called processes of disease are exemplifications of this defensive mechanism. In disease, we distinguish two great divisions of tissue changes, viz., those

<sup>1</sup> Presidential Address delivered at the opening meeting of the Glasgow Pathological and Clinical Society on 14th November, 1904.

which are the direct result of damage—an evidence of the necessarily vulnerable nature of the tissues—and those which are of a defensive or reparative nature. And these latter should not be regarded as pathological processes, but really as physiological in nature, exaggerated it may be or deviated by abnormal states. They are conveniently grouped as the formative and functioning processes, and have their prototypes in the normal growth and development of the body or in the normal life of the fully developed organs and tissues. We shall see that increased proliferation of cells and increased functional activity constitute the defensive mechanism in disease. It is manifest, though the fact is often overlooked, that in the scientific study of the phenomena in any diseased state we must resolve them into their simplest constituents and then discuss the significance of each. Thus, in conditions of infection the behaviour of the leucocytes, the nature and significance of exudation, alterations in the capillary endothelium and such like, would be separately considered. But so long as such a phenomenon as inflammation is treated as a single pathological process, attempts to define it and assign its biological significance can only result in endless dialectic.

The subject of defensive mechanism may be treated of in two main parts—the first dealing with the histological changes visible with the microscope, and the second, with these subtle chemical substances in the cells and fluids of the body which play so important a part both in protection against infective agents and in cure of disease. It need hardly be stated that the latter are the ultimate weapons of defence, but the visible cellular activities form an important underlying mechanism.

The chief cellular activities are, of course, embraced in the term *phagocytosis*, and the main facts are now so well known that they do not need to be repeated by me. A few points may, however, be referred to. That intracellular destruction of bacteria occurs is undoubted, and in this there are two factors, viz., ingestion and digestion; both are essential. Ingestion is largely governed by what is known as chemiotaxis—the attraction or repulsion of living cells by chemical substances. Whether all movements of phagocytes in the presence of bacteria are explicable in this way must be regarded as still doubtful. For example, the rapidity with which bacteria are ingested by leucocytes, even outside the body, is very remarkable, and one has difficulty in believing that a tendency for the leucocytes to move towards places where bacterial products are more concentrated, satisfactorily accounts

for the phenomenon. At present, however, we have no other theory to offer. The importance of positive chemiotaxis is thus obvious, and we can theoretically imagine the phagocytes of an animal to possess full digestive and destructive powers, and yet the defence to entirely fail, because the bacteria are not ingested, and thus brought into the sphere of the intracellular actions. What I wish specially to emphasise here is that the phenomena of positive chemiotaxis may be artificially created by certain methods. Many years ago Metchnikoff showed how a positive chemiotaxis, although naturally absent, might appear in the process of active immunisation of an animal. And later, when active immunity was shown to be associated with the appearance of certain substances in the serum of an animal, he considered that these substances acted to a large extent by stimulating the phagocytes. An interesting observation by Denys and Mennes may be quoted in this connection. They showed that when virulent streptococci were placed *in vitro* in the presence of the leucocytes of the rabbit, an animal susceptible to streptococcus infection, no phagocytosis took place; but if, in addition, a small quantity of anti-streptococcic serum were added, then an active ingestion of the organisms by the leucocytes occurred. Theoretically the explanation might be either that the serum stimulated the phagocytes, or that the serum in some way acted on the organisms and made them attract the phagocytes. With regard to the first, it is to be noted that not only stimulation to activity is required, but stimulation to move in a particular direction, namely, towards the organisms, and this has always appeared to me a thing difficult to imagine. Up to the present time scientific proof that certain substances directly stimulate the cells to phagocytic activity is wanting, but we have clear evidence that substances do act upon the bacteria, so as to make them attract the phagocytes, and thus become a prey to these cells. I shall make reference to this matter again later on. So much for some of the conditions which regulate the ingestion of the bacteria. After they are ingested they may be destroyed, or they may survive. Of this latter possibility, which is apt to be overlooked, many instances might be cited. It seems to me to be well exemplified in the case of gonorrhœal infection. Here, as is well known, after the disease is well established, nearly all the cocci are within the leucocytes, yet there is little evidence of their destruction, and the infection may not come to an end at that stage. On the contrary, it would appear that the organisms flourish and multiply within the cells, whilst the



cells on their part appear to sustain comparatively little damage. Apparently, then, an active phagocytosis may not be followed by a destruction of bacteria. But, while this is so, it must be recognised that intracellular destruction does occur; the bacteria are in many cases much more rapidly destroyed when they are within the cells than when they are free in the fluids. A good example of this is seen when staphylococci are injected into the peritoneum of a guinea-pig or rabbit. Within three hours, if a moderate dose be used, a large number are already contained in leucocytes, and one can trace every stage of a comparatively rapid destruction down to their complete disappearance. Given healthy conditions of tissues and cells, the number of organisms which can be got rid of in this way is enormous. The intracellular destruction takes place by a process apparently analogous to digestion; but our knowledge of intracellular constituents of leucocytes and other cells is still of a meagre kind, though various ferment-like substances have been separated from such cells.

The progress of researches on immunity soon, however, established two facts which tended to diminish the importance of phagocytosis, the one being that the blood serum of a normal animal might possess distinct bactericidal action on bacteria *in vitro*, and the other that within the body of an animal bacteria could be seen to undergo an extracellular destruction. To meet these facts, the upholders of what may be called the theory of phagocytosis ascribed the origin of these extracellular substances to the leucocytes, the substances either being a sort of secretion by the cells, or being liberated by the destruction of these cells. This matter, however, really belongs to a later period of my address, and I shall leave it for the present. At this point, I merely wish that we should have before us the general fact, viz., that the leucocytes and other phagocytes constitute an important means of defence, either through their phagocytic properties or their extracellular secretions. And this defence, it is to be noted, is directed principally, if not entirely, against the vital activity of the invading organisms, there being no satisfactory proof that they neutralise bacterial toxins.

Having arrived at the above simple statement, we see that the supply of these cells becomes a matter of prime importance. What are the provisions for a supply of phagocytes? Amongst the lowest animal forms, defence against invading parasites is provided for by what we may call the local phagocytes, although cells may be attracted from some distance around, apparently by chemotaxis. But, with the establishment of a

blood vascular system with phagocytes in the circulating fluid, another state of affairs is called into being: we now have phagocytes being carried past every part of the body, and capable of emigrating when occasion calls. And as we ascend in the animal scale we see still another phenomenon, viz., the fuller development of special sites in which the phagocytes multiply—the leucocyte-forming tissues, which include lymphoid tissue proper and myeloid tissue, the former being the site of multiplication of non-granular, the latter chiefly of granular leucocytes. It is now well recognised that the variety of leucocyte which emigrates most rapidly in acute infections and which is supplied in greatest numbers, is the polymorphonuclear neutrophile leucocyte; and, as I have stated in a recent publication, the high degree of defence supplied by these cells in warm-blooded animals seems to be related in part to the requirements against bacterial multiplication. For the rapidity of multiplication of organisms, once they gain a foothold, is so great at the temperature of the body, that both a rapid and an abundant supply of such cells becomes essential. Under the influence of chemiotaxis the polymorphonuclear leucocytes emigrate into the tissues, as has been stated, but the same chemiotactic substances, if present in sufficient amount, enter the blood, and thus come to induce a passage of the reserve cells lying in the bone-marrow into the blood. The result is that the leucocyte content of the blood on the whole is not diminished, though cells are constantly leaving it, but on the contrary undergoes increase; in other words, a leucocytosis is established. But this is not all. As was shown by the independent observations of Ribbert, of Roger and Josué, and of myself, following upon the phenomenon described, there occurs a great proliferation of the mother-cells in the marrow, so that the amount of leucocyte-forming tissue is increased, and this is seen not only by a relative diminution of the fat in the normal red marrow, but also by a replacement, to a greater or less degree, of the fatty marrow by red marrow in the long bones.

Thus it is manifest that to understand this means of defence, we must take account of not only the local changes in the tissues, but also the condition of the blood and the degree of the reaction in the marrow. In the light of these facts, the significance of a blood leucocytosis becomes manifest—it means that the cells in demand are passing in large numbers from their seat of formation to the parts where they are required. The variations of the leucocytes in different diseases have now been so fully recorded that I need not

mention them. But, it may not be out of place if I make one or two general statements on the subject. In the first place, we may state that bacteria which produce a local emigration of the neutrophile leucocytes will cause a neutrophile leucocytosis if the infection be sufficiently extensive. And the converse would also appear to be the rule, viz., that organisms which do not attract the neutrophiles locally do not cause a leucocytosis. As examples of acute infections of this second class, typhoid fever and acute tuberculosis may be mentioned. Secondly, with normally reacting tissues, it may be said that in a general way, and up to a certain point, the leucocytosis increases with the extent of the infection; the degree of the leucocytosis may thus sometimes be of service in indicating the extent of the lesion, or in other cases when that is known, it may indicate whether or not a healthy reaction is present. Thirdly, in infections where leucocytosis is the rule, the absence of such, or the diminution or disappearance of such without amelioration of the symptoms, is a grave sign; it indicates severe toxæmia, with consequent interference with the supply of the defensive cells, or it indicates an inherent want of reactive power. I may mention with regard to this latter point, that in cases of pneumonia in alcoholics, where leucocytosis is often absent, I have found a corresponding defect in the reaction of the bone-marrow, the usual increase in myelocytes being absent. This is still more strikingly the case in hæmorrhagic small-pox, as has been shown by Ferguson and others. It is scarcely necessary to point out that the converse of this third general statement does not hold good, viz., that a well-marked leucocytosis implies a favourable issue. The leucocytosis merely indicates that a reactive process is present, which is the most favourable *in the circumstances*; but death may be brought about in various ways, and may occur when marked leucocytosis is present. Further facts in connection with leucocytosis might be brought forward, but I am endeavouring rather to treat the subject in a general manner; and I would also wish to state that however valuable blood-examinations may be, their full value cannot be obtained without an intelligent grasp of the processes underlying them, and that any attempt to use them otherwise than as an important auxiliary in diagnosis and prognosis, will undoubtedly lead to error. But on the other hand, anyone with a knowledge of the changes in the tissues in disease, and of the general principles of reactive processes, will have little difficulty in deriving valuable help from this method of clinical investigation.

The behaviour of the eosinophiles in conditions of disease forms an extremely attractive study, but I cannot now enter on the subject. It is sufficient to state that these cells, as regards emigration into the tissues, increased numbers in the blood, and proliferation in the marrow, closely resemble the neutrophiles; only here the chemiotactic substances are of a different nature and form a more restricted group. There are still important gaps in our knowledge regarding the non-granular cells—lymphocytes and hyaline leucocytes—but we can at least say this, viz., that in infections the reaction on the part of these cells is not a mere local affair, but extends to the various tissues in which such cells take origin. And thus, with regard to these cellular activities, we may state that whether the cells produced in excess act as direct phagocytes or indirectly as producers of some of the defensive substances to be referred to presently, we see a remarkable mechanism in the defences of the body, whereby a general reaction of the tissues supplying the cells in question is brought into play.

Before leaving this part of the subject, I may refer to some conditions which favour the local defence, and some means by which it may be aided. Among the former may be placed an abundant supply of leucocytes and free movement of these cells, and, we may add, a free flow of lymph. The normal peritoneum is now recognised to have extensive powers of destroying bacteria, and this circumstance is due to the factors which I have named. And I may mention as a striking fact, that the dose of staphylococci may be so regulated that, when introduced into the peritoneal cavity of a rabbit, they are rapidly destroyed without causing any lesion beyond that of an active local leucocytosis, which soon disappears; but that when the same dose is injected subcutaneously, a local fibrino-purulent infiltration is the result. The explanation of these results, which I have repeatedly noted in the course of experiments, is not only a greater concentration of the organisms in the latter case, but also what we may call a hampering of the defensive powers by the anatomical arrangements. The effects of poulticing, say a poisoned wound, are probably to be explained according to like principles—the tissues and vessels in the neighbourhood become relaxed, and both a freer action of the phagocytes and an increased circulation of lymph, or, as Wright puts it, “a flushing of the part with fresh lymph,” are brought about. And the opening of an abscess not only results in getting rid of many of the organisms present, but also in bringing fresh cells and fresh lymph into the seat of damage. But by far the most important means of increasing

the phagocytic activity is supplied by active immunisation or vaccination in the general sense. To this I shall refer later, but it may here be remarked that this method increases the defence in a special direction only, namely, towards the organism used for injection. Theoretically, also, the local defence might be aided by increasing the leucocyte content of the blood. Such an idea is quite a rational one, and Mikulicz recently, as is well known, has put it to the test, both experimentally and in a considerable number of clinical cases. His results are certainly encouraging, though he fully recognises that a more extensive series of observations is requisite. It is to be noted that in his work, so far as I know it, the endeavour is to provide for a rapid and efficient defence in case it should be required, and this appears to me the most hopeful line of procedure. After a local inflammatory or suppurative lesion has been established, the leucocytosis which is naturally brought about may, for obvious reasons, be insufficient to meet the circumstances of the case. It is nature's defence, but, as is well known, it may entirely fail. The establishment of a leucocytosis in an acute infection, *e.g.*, pneumonia, when the leucocyte count is below normal, is another conceivable possibility, but here there is much less hope of success. For in such a case the fault is not the want of chemiotactic substances in the blood, but a failure on the part of the leucocyte-forming tissues to react, either as the result of some pre-existing fault or as the result of an overpowering toxic action.

The defensive powers of the body, so far as the production of phagocytic cells is concerned, are sufficiently striking; but, when we come to the ultimate weapons of defence—the antitoxic and bactericidal substances, we meet with facts which are more remarkable still. As is well known, such substances, which may have their representatives present in small quantities under normal conditions, become produced in large quantity during active immunisation, and it should be kept in view that a similar process takes place during many infective diseases—a process which may result in the cure of the disease. The discovery of the presence of these bodies in the serum of highly immunised animals, of course forms the basis of serum therapeutics. It is further to be noted that the formation of antitoxic and bactericidal bodies is not an isolated biological fact, but is, on the contrary, merely an example of the power which the body has of producing antistances to certain organic molecules. We can, in fact, divide organic substances into two great groups, *viz.*, those which when injected into the tissues lead to the formation of antistances, and those



which have not this effect. With regard to the former, we can make the general statement that they are all molecules of highly complex constitution, and probably of proteid nature; but their true constitution is unknown, and it is doubtful whether any have been obtained in a perfectly pure form. So far as I know, there is no example of an organic substance with known constitution, such as an alkaloid or neutral principle, to which a true antisubstance can be produced, although toleration to their action may be developed. This, however, is quite another matter. There is only one way in which the presence of an antisubstance can be demonstrated, and that is by its effects on the particular substance by which it has been produced. An antitoxin can only be recognised by its effect on the corresponding toxin, a precipitin by its effect on the corresponding proteid, and so on. Now, what is an antisubstance, and how does it act? The effects of such bodies vary greatly in different examples, and names have been applied accordingly. Thus we have antitoxins, antibacterial substances, agglutinins, precipitins, opsonins, antiferments, anticomplements, &c. But, whatever be their action, we may now say that they have this common property, viz., that they enter into chemical union with the substances on which they act; moreover, they show, as a rule, in such combination a specific affinity.

A word of explanation ought, perhaps, to be given with regard to the term "specific," as it bears on matters of diagnosis. The agglutinin to the typhoid bacillus exhibits its most marked effect, as is well known, on the typhoid bacillus; but it often acts, though in a much feebler manner, on an allied organism, namely, Gärtner's bacillus. There thus appears to be a want of specific action. A bacillus is, however, not an organic substance, but a conglomeration of complex organic molecules, and the explanation of the fact stated is probably that, while the molecules with which this agglutinin combines are present in largest proportion in the substance of the typhoid bacillus, some of these molecules are also present in Gärtner's bacillus. Hence the agglutinin has a weak action on the latter. The specificity, therefore, is not a biological one, but concerns chemical combination. It follows from this that in applying an agglutinative test, the quantitative element must come in for consideration.

The chemical combination of a substance and its anti-substance can be shown by various test-tube experiments; it is also exemplified in the phenomena of immunisation. If a certain amount of the antisubstance is present in the blood,

this will undergo a diminution on the injection of more of the particular substance, owing to its being used up by combination. Later, given favourable conditions, there will be a rise in the amount of antistubstance above its former level. I have already stated that the presence of various antistubstances may be detected in the normal fluids of the body, and even if this be not the case, we have good grounds for believing that they are present in the complicated structure of the living cells. To state the matter as simply as possible, antistubstances are molecules naturally present in the fluids or cells of the body. They possess a chemical affinity for particular organic substances, and they are formed in great excess when these substances are introduced into the tissues. This, as many of you are aware, forms the basis of Ehrlich's side-chain theory, but time does not permit me to discuss it in detail.

I have said that antistubstances possess a common property, viz., that of specific combination, but while this is so, they may be distinguished according to their action. The division may be made, according to Ehrlich's scheme, into three groups. In the first group, the antistubstance merely enters into combination; antitoxin may be taken as an example. So far as we know, the antitoxin has no other effect than that of satisfying the combining affinity of the toxin. It will be evident that a toxin saturated with antitoxin, and thus bereft of its power of combining with the cells of the body, has become harmless. In the second group, the antistubstance not only combines, but produces some recognisable physical change. Examples of such action are afforded by agglutinins and precipitins; the agglutinin not only combines with the bacteria, but produces clumping; the precipitin combines and produces alteration of the physical condition of the corresponding molecule, shown by the appearance of cloudiness in the serum. And that this special action is not the direct result of the combination, is shown by the fact that it is possible so to modify the antistubstance that it is deprived of its special action (*e.g.*, agglutination, precipitation, &c.), while it still retains its combining property.<sup>1</sup> The third group contains these antistubstances which, to speak generally, are concerned in some destructive action. They likewise combine with the substance on which they act, but to produce the characteristic effect they require the co-operation of a substance present normally in the serum, now usually known by Ehrlich's name of *complement*.

<sup>1</sup> The termination *oid* is used in Ehrlich's nomenclature to signify molecules altered in this way; thus we have toxoids, agglutinoids, precipitoids, &c.

The antisubstances in this group are usually known as immune-bodies (Immunkörper).

In what way an immune-body acts—whether it forms a sort of link between the complement and the molecule to be acted on, or not, need not be discussed here. It is sufficient for our purpose to recognise that the particular destructive effect is brought about by the action of the two substances mentioned—the specially developed antisubstance and the normally present complement—and it is a fact of practical importance that the latter is not increased during the process of immunisation. To this third class belong the bacteriolytic and bactericidal sera (we might call them bacteriotoxic sera), and the various sera developed by the injection of the cells of one animal into another of different species—the cytotoxic sera, of which the example most fully studied is the hæmolytic serum. To put the matter broadly, an intolerance on the part of the tissues of an animal for cells foreign to it, and the development of special means of destroying such cells when they are introduced into the body, would appear to be phenomena of common occurrence in the animal kingdom. They are seen both when unicellular organisms, such as bacteria, and also when the cells (red corpuscles, &c.) from another species of animal are injected.

[The action of precipitins and agglutinins, and the necessary co-operation of the antisubstance (immune-body) and of complement in the production of hæmolysis, were here illustrated by test-tube experiments.]

Such, then, is a brief account of the different classes of antisubstances, and, as I have indicated above, the essential and the common feature is that we have to deal with a striking production by the body cells of molecules having a combining affinity for the molecules introduced into the body. Details regarding the action of the various antisubstances are sufficiently abundant in recent literature, and I need not give them here; but one recent set of observations are well worthy of note, viz., those of Wright on the bodies called by him *opsonins*. He has shown that substances are present in the blood serum which may not kill bacteria, but which act upon them in such a way as to make them liable to attack by the phagocytes. To take a concrete example, human serum has little or no direct bactericidal effect on staphylococci; but if a mixture be prepared of human serum, washed human leucocytes and staphylococci, marked phagocytosis of the cocci by the leucocytes occurs at 37° C. On the other hand, in a mixture of the leucocytes and cocci there is little phagocytosis,

and the same is the case if the serum be added to such a mixture after the opsonins in it have been destroyed by heating. The opsonin for a particular bacterium is increased by injections of this bacterium; in other words, the production of opsonins conforms with that of antistances, as described above. Wright has also shown that in certain cases of infection with an organism, say a staphylococcus, the opsonic effect of the patient's serum on the organism can be increased by injections of dead cultures, and he has already obtained striking therapeutic results. Further observations will be necessary before we know fully the relations of opsonins to other substances in the serum, if there be such relations; but there is no doubt with regard to the striking manner in which they act as an aid to phagocytosis. And what I referred to above as a belief long held by some, viz., that the presence or absence of phagocytosis towards a bacterium may not rest with the phagocytes *per se*, but may depend on the presence or absence of particular bodies in the serum, becomes an established scientific fact.

The production of antistances, even did we understand it completely, by no means explains the whole phenomena of immunity. It is well known that acquired immunity may exist without the presence of antistances in the serum—for example, it may exist after they have disappeared, and we do not yet understand the nature of the alteration of the cells of the body which underlies such a condition. A state of acquired tolerance to toxic action, which is a pretty wide property in the animal kingdom, as Metchnikoff has shown, may play a part, but it cannot supply the whole explanation. I have, however, dwelt especially upon the subject of antistances, because their formation is one of the most wonderful phenomena in biological science, and also because the fundamental facts are not yet sufficiently widely known. I am sorry that time does not permit me to say something regarding the methods employed in the study of the constituents of the serum. I may state, however, that means have been devised by which certain of the different bodies can be removed from the serum, leaving others present; that their quantity can be estimated, at least in a relative manner; and that their combining relationships as well as their physiological action can be studied. A wonderfully extensive analysis of a serum may thus be made by what may be called bio-chemical methods, even though, as I have already said, the substances in question are quite inaccessible by ordinary chemical procedures;

we have, in short, a new field of inquiry—that of biochemical analysis.

The study of serum in artificial immunity has supplied indications which have been followed up in the case of natural immunity. The presence or absence of phagocytosis plays an important part, and the facts mentioned above show that this means in great part the presence or absence of suitable opsonins in the serum. The bactericidal power which was first shown by Nuttall to be present in normal serum is also a factor of great importance, although it is now well recognised that this bactericidal power, as tested *in vitro*, does not always go along with a condition of natural immunity. The term alexin was given by Buchner to indicate the comparatively labile bactericidal substance, but there is now evidence to show that in many cases alexin really represents two substances, viz., alexin proper or complement, and another substance which is the homologue of the immune-body of an antiserum, as described. The hæmolytic power and the bactericidal power of a normal serum are closely similar as regards mechanism, and the presence of the two substances in question can be in many instances quite easily demonstrated in a normal serum with hæmolytic properties, *e.g.*, in the case of the action of guinea-pig's serum on ox's corpuscles. It is, therefore, probable that in many instances normal bactericidal action is a more complicated process than was formerly supposed, though it is possible that in some cases it may depend upon one complement-like substance alone.

Such are some of the chief facts established with regard to immunity, and it may not be out of place if I point out that they have a close bearing also on the cure of infective diseases. In acute pneumonia, for example, cellular reaction is exemplified in the highest degree, not only locally, but also, as I have explained, in the leucocyte-forming tissue of the bone-marrow. But in addition to this, antistances are produced as the result of the infection, possibly both antitoxic and antibacterial, and the crisis probably occurs when these bodies appear in the blood in large amount. In typhoid fever we have to deal not only with a local lesion, but also with a general infection, the bacilli growing in various organs of the blood; and it has been demonstrated that agglutinins and protective substances are developed during the course of the disease. Cure does not merely consist in the healing of the local lesions in the intestine, but in the overcoming of the bacterial products by antistances formed by the tissue cells.



In the course of an attack of diphtheria, antitoxin is produced in the body, and so on—many corresponding examples might be given. From the combining properties of antisubstances, various conclusions can manifestly be drawn. When they are in sufficient amount, and the bacteria are accessible to their action, the bacteria will be destroyed; any fresh development of bacteria will lead to the using up of antisubstances, and more must be produced; conversely, a fall in the content of the serum in antisubstances may lead to a recrudescence of the bacterial multiplication. And we may say, generally, that the production of antisubstances, like all physiological processes, requires for its most rapid and efficient attainment, a healthy condition of the tissues. The meaning of "good resisting powers" is thus carried a step further back, though the full explanation cannot yet be supplied.

At the outset I pointed out the two main kinds of defence possessed by the body, the cellular and the chemical, and the importance of correlating these will be at once manifest. The question comes to be, what cells of the body are responsible for the production of antisubstances and other defensive bodies? In witnessing the destruction of bacteria in the interior of leucocytes and other phagocytes, we are practically led to assume the presence of ferment-like substances with digestive properties within such cells. It would, therefore, appear not unnatural to suppose that the substances with bactericidal properties in the serum were the same bodies liberated from the cells. This idea has especially been elaborated by Metchnikoff and various workers of the French school, so that, although the importance of these cells as direct phagocytes has been much diminished by recent researches, their position in relation to the general defence might still be maintained. Metchnikoff regards the important destructive agents as digestive ferments or *cytases* formed by the phagocytes, and he distinguishes two chief varieties, a microcytase and a macrocytase. The former is produced by the microphages or polymorphonuclear leucocytes, and acts specially against bacteria; the latter is formed by the macrophages or nongranular phagocytes, and destroys chiefly protozoa, the cells and other formed elements of the body, &c. Attempts have also been made to trace the origin of other antisubstances—agglutinins, immune-bodies, and even antitoxins, to the same cells or to the tissues in which they are produced, *i.e.*, spleen, lymphatic glands, &c. When we, however, consider the evidence for such views, we find it by no means conclusive. Some observers state that they have succeeded in separating from the leucocytes substances with

the particular properties in question; others, again, have met with negative results. It is a subject on which we must wait for further light. It is extremely probable that the cells which are most active in defence, and for the supply of which an effective mechanism has been arranged, should be a chief source of defensive substances. It would, on the other hand, be somewhat strange if the endothelium of the blood-vessels also—the tissue which is, no doubt, of high importance in regulating the composition of the serum—should not play an important part in producing the antisubstances present in the serum. We must leave the matter here, but I may say that my own belief is that the property of forming antisubstances will be found to be generally possessed by animal cells, and that, therefore, the site of their production will be of the widest extent.

I have thus attempted to sketch some of the methods in which the tissues of the body protect themselves against harmful agents. These methods are directed chiefly towards killing the invading micro-organisms or neutralising their toxins. In infections we see a remarkable activity on the part of the defensive cells—an activity which we can recognise by microscopic methods, alike locally in the neighbourhood of the bacteria, in the circulating blood, and in the leucocyte-forming tissues. In all this, as I stated in my opening remarks, there is no new process brought into play; there is simply an exaggeration of normal activities. But besides these, there are ultra-microscopic activities concerned with the production throughout the body of protective and neutralising substances of various kinds. These antisubstances are in their turn no new formations, but represent an increased production of molecules normally present. Their variety appears almost unlimited, and the facts established with regard to them throw a new light on the excessively complicated structure of living protoplasm. Researches in this domain appear for the moment to have brought forward an array of facts difficult to grasp; but we may confidently look forward to the establishment of relatively simple laws regarding them. In spite of the great addition of new facts in pathology within recent years, as a science it has become simplified, just as its principles have become more intelligible; and certainly some of the most important results obtained are those bearing upon the defensive powers of the body in disease.

EXTRA-UTERINE PREGNANCY.<sup>1</sup>

By J. K. KELLY, M.D.

LADIES AND GENTLEMEN,—My first duty is to thank you for the honour you have conferred upon me in electing me to the presidency of this Society. On entering upon the duties of the office, I must confess to a considerable feeling of misgiving when I ask myself whether I shall be able to worthily carry on the work so well done by former presidents. But I shall simply do what I can, and I am encouraged by the hope that, as I occupy this chair by your goodwill, the same goodwill may continue all through to make my duties easy. And I may take this opportunity to ask every member to try to take some part in our discussions here. One is apt to think that the cases he meets with are not sufficiently important to bring before the Society; but there is no case that is not possessed of some interest, and matter for discussion may arise about even the most trifling cases. Often, indeed, it is the trifling cases that raise the most puzzling questions. I trust, therefore, with your co-operation, we may be able at the end of the year to look back with satisfaction on a record of work well done.

I propose to-night to lay before you a few considerations regarding extra-uterine pregnancy. The specimen from the first case on which I operated is now in the Hunterian Museum, and is a most beautiful example of ruptured tubal pregnancy. It occurred in 1892, and since then I have seen about a hundred cases in various stages of development from the earliest up to nearly full-time. I may, therefore, lay claim to some personal acquaintance with the subject, and it has naturally occupied my thoughts a good deal. I trust, therefore, that although I may not bring before you anything very new or startling, you may be interested in viewing the subject from an independent standpoint.

I prefer the word "extra-uterine" to the word "ectopic," to denote a pregnancy situated outside of the uterus. Some of the sites which the placenta occasionally occupies within the uterus, and which are therefore not extra-uterine, are, in the truest sense, ectopic. Placenta prævia, *e.g.*, occupies a situation which is quite abnormal, and which we may feel entitled to

<sup>1</sup> Presidential Address to the Glasgow Obstetrical and Gynæcological Society, delivered 26th October, 1904.

say was never by nature intended for the site of the placenta. In the same way a pregnancy in the substance of the uterine wall, such as is present in what is called an interstitial tubal pregnancy, is ectopic, while it is extra-uterine only in the sense that the placenta is not attached to the endometrium. The word ectopic, therefore, should be taken as covering a wider area than the word extra-uterine, and will be taken in this sense if used at all in this paper.

An extra-uterine pregnancy, then, may be defined as a pregnancy which results from the settlement of the pregnant ovum elsewhere than in the endometrium.

At first sight it would appear somewhat incredible that an ovum could settle anywhere except on a mucous membrane, and if that were the case the only possible extra-uterine pregnancy would be a tubal pregnancy. But the theory of the embedding of the ovum which is at present generally accepted, would almost indicate that the impregnated ovum can settle on any tissue in which it can obtain the blood-supply necessary for its growth. We might almost say that when the impregnated ovum has reached a certain stage in its development, it will settle and fix itself wherever it may be if the tissue on which it lies presents a surface through which it can penetrate into a sufficiently vascular area. If this be the case, we must admit that, so far as histological conditions are concerned, peritoneal and ovarian pregnancies are as much within the region of possibility as are tubal pregnancies. Why they are not so common, and are indeed so very rare, may be suggested to us by future considerations.

But why should we have an extra-uterine pregnancy at all? What circumstances determine the settlement of the ovum in an extra-uterine situation?

Various conditions have been suggested as likely to facilitate its occurrence; but before considering these, we must have a clear conception of the conditions which enable normal pregnancy to occur. If we are able to attain this, it may then be more easy to arrive at an explanation of the deviations from the normal which result in extra-uterine pregnancy.

The first step towards pregnancy is the introduction of spermatozoa to the female genital canal. Now, it is a well-ascertained fact that for this introduction it is sufficient that the spermatozoa should be deposited on the vulva, though, as a rule, the deposition takes place in the upper part of the vagina. In either case, the spermatozoa have some distance to travel before they reach the situation in the upper part of the uterus in which we usually find the placenta attached.

Where the union of the sperm and germ, that union of male and female elements which constitutes impregnation, usually takes place in the human subject has not been ascertained. We may regard it as possible that such a union takes place not infrequently in the vagina, but it is, of course, useless there. It may be that in some cases impregnation takes place in the uterine cavity, and so brings about a low attachment of the ovum, such as we have in placenta prævia. It may be that the usual seat of its occurrence is in the Fallopian tube or upon the ovary, where spermatozoa have sometimes been found, even in the human subject, and where they are frequently found in lower animals.

The spermatozoa, in fact, have a remarkable power of locomotion, the speed of which has been calculated by Henle, who supposes that a spermatozoön can travel in one minute about four hundred times its own length. In a prostitute, who died during coitus, Birch-Hirschfeld found spermatozoa in the tubes when he made a *post-mortem* examination sixteen hours after death. This case, however, I may note in passing, is not to be relied on, as spermatozoa may linger long in the genital canal in an active condition, and those found in this case may have resulted from a former coitus. Dührssen, *e.g.*, found spermatozoa in a Fallopian tube which he removed more than three weeks after coitus had taken place.

The rapidity of the movement of spermatozoa, however, is not of so much importance as the direction of the movement, as they could not reach the ovum unless they were directed inwards along the genital canal. Why, then, does the sperm take this direction?

I think there is no doubt that the reason why it advances inwards is that its movement is naturally directed against the outward flow caused by the ciliated epithelial lining of the uterus and tubes. This outward flow carries with it such inert substances as the ovum and desquamated epithelium and detritus, which have no inherent mobility, but a flagellate cell such as the spermatozoön moves against the stream, just as the trout in the river naturally and most easily moves against the current. The essential condition for the advance of the sperm along the genital canal may be regarded as the persistence of the flow caused by the ciliary movement of the genital epithelium. If there is no such flow, the sperm will simply move about in indeterminate directions. Hausmann relates having found living spermatozoa in the cervix seven and a half days after coitus.

This ciliary current most probably exists, not only in the

uterus and tubes, but also in the peritoneal space surrounding the fimbriated ends of the tubes. It is by this ciliary flow that the ovum discharged from the Graafian follicle is caught and carried into the tube, just as it is by this flow that the spermatozoa are directed to meet it in its passage along the canal. At what part of the canal this meeting normally takes place we do not know; but the frequency of tubal pregnancy indicates that it often takes place in the tube, if indeed it does not point to the site of impregnation being *usually* above the uterus.

The mere fact that pregnancy normally goes on in the uterus does not prove that impregnation occurs there. Indeed, the probability rather is that the impregnated ovum is already different from the unimpregnated before it reaches the uterine cavity. Otherwise, why should its fate there differ from that of the unimpregnated ovum?

Without, however, entering further into the question of normal pregnancy, it is evident from what has been said that for the union of sperm and germ in the tube a healthy mucous membrane, with active cilia, is necessary. Any inflammatory or other disease of endometrium or lining of tube which destroyed the ciliated epithelium, would prevent impregnation altogether. It was Lawson Tait's opinion, and has since been maintained by many gynæcologists, that salpingitis—desquamative salpingitis, as Tait named it—was the condition that favoured the occurrence of tubal pregnancy; but not only the theoretical reason I have given, but the results of microscopic examination of the tube as well, have shown that this cannot be the case. Desquamative salpingitis, by putting a stop to the ciliary flow, would prevent the union of sperm and germ, and it is, of course, self-evident that closure of the tube at any part would have the same effect. In any consideration of the causation of extra-uterine pregnancy, therefore, these conditions should be at once put aside.

Now, if we admit that for extra-uterine as for normal pregnancy the genital canal must be in a condition to further the meeting of the male and female elements, we must look for the cause of extra-uterine pregnancy in the impregnated ovum itself, rather than in the canal through which it passes. And when we ask what condition of the ovum would bring about extra-uterine pregnancy, the answer that at once suggests itself is, that before it has travelled to the uterus it has reached a stage of the pregnant condition in which it is fitted to attach itself to the maternal structures. To illustrate this let us take that interesting phenomenon, the external

transit of the ovum, *i.e.*, the passage of the ovum from the ovary of one side to the tube of the other side. It may be supposed that in this case a longer interval than usual would elapse between the escape of the ovum from the Graafian follicle and its reception into the uterus, and if the ovum were impregnated shortly after leaving the ovary, this interval might be long enough to allow the pregnant condition to become sufficiently advanced for the embedding of the ovum to occur before it reached the uterus. We might formulate this theory by saying that anything that unduly retards or prolongs the passage of the impregnated ovum from the ovary to the uterus tends to cause extra-uterine pregnancy. And under this theory we can classify many of the conditions that have been thought to favour its occurrence.

Many authors are of opinion that tortuosity of the tube favours tubal pregnancy, whether this tortuosity be due to the persistence of a foetal condition or to flexions caused by adhesions, and this may well be the case. It is evident that tortuosity of the tube would delay the passage of the ovum in two ways—by giving it actually a longer canal to traverse, seeing that a tortuous tube is usually an elongated tube, and by cross-currents and eddies being set up in the fluid within the tube by the alternate dilatations and constrictions of the canal.

On the other hand, the onward passage of the ovum may be delayed by slowness of the ciliary stream, and it is here that an antecedent salpingitis may act by destroying some of the ciliated epithelium. In some cases, extra-uterine pregnancy is found associated with salpingitis, and may result from it in this way, though we must agree with Martin that in many of these cases the salpingitis met with is as probably as not secondary to the tubal pregnancy.

Another theory which has been advanced in an interesting paper by Moericke, is perhaps worthy of consideration. This theory is that tubal pregnancy is a reversion to an earlier type. In some lower animals the ovum naturally develops in the tube, and on the principle that during development the individual ovum passes through the stages of the evolution of its species, and may in some part or organ remain at one of these stages, it is possible that the tube in some women may retain an early or atavistic condition. This reversion may be either structural or functional, and with it other phases of reversion may be associated, such as twin pregnancy. Twin pregnancy, in fact, is proportionally more common in tubal than in uterine pregnancy; and our Secretary has reported a

case in which a tubal pregnancy was associated with intra-uterine twins. Several cases of twins, both in the tubes or one in the tube and one in the uterus, have been reported. Olshausen explains such cases by supposing that the twins mutually hinder each other, and accordingly either one or both may be delayed in the tube; but it is possible that the real explanation is to be found in reversion of type.

Structural reversion, *e.g.*, may explain those cases, which are not infrequent, where both tubes become pregnant, as well as those remarkable cases where the same tube has been found twice pregnant.

Whatever the peculiar condition that delays the ovum in its passage towards the uterus, there is no doubt that in cases of tubal pregnancy the ovum, while in the tube, reaches that stage of development which enables it to settle upon and embed itself in the wall of the tube. What is that condition? And for its successful result, does it require a corresponding stage of development in the tubal wall? Is there, in fact, a preparation of the wall of the tube, such as we find in the uterine wall, in anticipation of pregnancy? Is there a formation of decidua?

On this subject the result of investigation is not yet quite decided. Many cases are reported in which the most careful research has failed to discover any decidua in the tube. In other cases, decidual cells have been found in detached parts of the mucous membrane, and in still others the whole tube has formed a decidua, and decidua has been found in the non-pregnant tube and in the uterus as well. In some cases, again, the formation of the decidua seems to follow rather than precede the embedding of the ovum.

Perhaps we ought not to lay much stress upon the presence of decidual cells in the causation of pregnancy, seeing that similar cells have been occasionally found on the peritoneum and ovary as well as in the uterus and tubes. Their function is doubtful, and cells of a similar kind are sometimes found in endometritis. Zweifel has even met with them in the tubes in salpingitis, independent of pregnancy. Perhaps they merely represent a phase of degeneration, or at least of nutritive change in the connective tissue cells of the mucous membrane, and, in the uterus, are well named decidual, as they enable the membrane in which they are found to be thrown off freely from the surface. At anyrate, we may assert from the consideration of tubal pregnancy that a decidua is not a condition necessary to the occurrence of pregnancy, while there is no doubt that its presence in the uterus indicates that in that



organ it favours, if not the occurrence, at least the maintenance of a pregnancy till full term. In the tube, the ovum lies below the mucous membrane, and it is enclosed in muscular tissue, showing that its seat is not upon or even in the mucous membrane. In this respect it differs entirely from uterine pregnancy, in which the muscular wall beneath the mucosa is not invaded by the ovum, and its strength thereby retained unimpaired. The decidua, in fact, protects the muscular wall and supplies room for the development of the vascular system of the placenta without any encroachment on the muscular wall.

Probably, as has been already said, it is not so much in changes in the tubal wall as in changes in the ovum itself that we are to look for the cause of the embedding of the ovum in the tube. The surface of the earliest human ovum yet observed is covered with a layer of cells, some of which, at least, form that peculiar substance called syncytium. This substance seems to have a destructive action upon the tissues with which it comes in contact, and when it forms upon the ovum we may suppose that this at once burrows into the maternal tissues wherever it may be situated, whether in the tube or in the uterus. How long after impregnation it is before the syncytium appears we cannot tell, but it is at anyrate a very early development. In Peters' case, the woman had menstruated on 1st September, and at the end of September felt indications of pregnancy, while the menses did not appear. She committed suicide on 1st October, and a few hours after death a section was made. At the section some active spermatozoa were found in the vaginal secretion, and a small abrasion, nearly healed, was present on the vulva, indicating, perhaps, that the fruitful coitus had taken place about a week before and the impregnation naturally rather later—possibly only three or four days before death. In this ovum, which was already embedded in the uterine mucosa, there were no chorionic villi, but from the trophoblast which covered the ovum small processes passed out towards the maternal tissues, which might be the beginning of villi, and of these processes some at least were becoming syncytial.

We may be fortunate enough some day to meet with an ovum in process of settlement in the tube, but till then we may accept it as probable that if the ovum reaches the stage of developing syncytium on its surface before leaving the tube, a tubal pregnancy will necessarily result whatever the condition of the tube itself may be.

It is a frequent experience that a diseased uterine mucous

membrane gives attachment to an ovum, and only when the ovum reaches a certain stage the diseased mucous membrane becomes unable to continue its nourishment, and an abortion takes place. So we may say that a diseased tube, when the disease is not advanced enough to prevent pregnancy altogether, may give harbour to an ovum for a short period until the food it can supply to the growing ovum proves insufficient for its continued growth. But even a healthy tube is unfavourably placed for the maintenance of a pregnancy, and in the immense majority of cases a tubal pregnancy is interrupted at an early stage.

What is the cause of this interruption?

The explanation which first suggested itself was, naturally, that the tube was unable to grow in proportion to the rapid growth of the ovum, and accordingly the distension of the ovum caused thinning out and ultimately rupture of the tubal wall. It is to be noted, however, that in many cases of ruptured tubal pregnancy the rupture has taken place when the patient was at rest, and not during such exertion as would tend to increase intra-abdominal pressure and possibly burst a thin-walled cyst in the pelvis. It is also to be noted that the tube is often found much more distended in pyosalpinx and hydrosalpinx without rupture taking place, and in cases also of tubal abortion in which rupture does not occur. We must look for some other cause of rupture than mere thinning out and distension, and this cause is probably to be found in the corrosive action of the syncytium upon the tubal tissues. The so-called rupture, in fact, is not properly a rupture, but a perforation.

In a considerable proportion of tubal pregnancies this perforation does not occur, but an abortion takes place—that is, the ovum is found either extruded or in process of extrusion from the tube through the fimbriated end, which is greatly stretched by the passing ovum.

In these cases of abortion, the condition found in the tube is something like this:—The pregnancy is sufficiently advanced for chorionic villi to have formed a placenta. The syncytium from the villi has opened into the maternal vessels, and as the walls of these vessels are insufficiently supported or replaced by the tubal wall, bleeding has taken place into the membranes of the ovum. The essential thing here is the perforation of the blood-vessels and the escape of blood into an enclosed space. This loss of blood and the pressure resulting from its accumulation in the tube may bring about the death of the ovum, and the process may end with the

presence of what is practically a foreign body in the tube—a tubal mole.

When rupture, or rather perforation of the tube occurs instead of abortion, we probably have the erosion of a vessel near the peritoneal surface of the tube, and the blood escaping into the peritoneal cavity does not disturb the membranes of the ovum, as in the case of abortion, and, at the same time, does not exercise pressure on the ovum, so that there is less necessity for the death of the ovum to take place. Hence in such cases we might expect recurrent or continuous hæmorrhage much more frequently than in cases of abortion, and this is what we find in actual fact. Even in cases of abortion, however, recurrent hæmorrhages are not infrequent, and these are probably due to the continued life and activity of syncytium present in the site of the ovum. The very free hæmorrhages which often follow even uterine abortion probably result from the same cause rather than from the mere congestion of the mucous membrane, as is usually supposed.

The period of pregnancy at which a perforation of the tube occurs varies very considerably, and it is sometimes so early that it could not be explained as the result of distension of the tube. The time of perforation probably depends upon the thickness of the part of the tube that intervenes between the site of the pregnancy and the surface of the tube, and when this is only a thin portion of the wall, the perforation will occur at a very early stage.

But, however early the stage, the amount of hæmorrhage may be enormous. Indeed, it would almost seem as if the amount of bleeding was even greater in the early than in the more advanced extra-uterine pregnancies, and a hæmorrhage in the third week may be of more deadly effect than one occurring in the third month. This cannot therefore depend on the size of the vessels opened or on the extent of the opening in the tubal wall, or on the extent of the separation of the ovum from its site. Most probably it is due to the peculiar corrosive action of the syncytium, and to its quality of preventing the coagulation of the blood, which would be the natural means of hæmostasis in these cases. The study of deciduoma malignum has illustrated these fatal properties of the syncytium, and probably supplies a clue to the explanation of this, the most alarming and fatal result of extra-uterine pregnancy.

The reference to rupture of the pregnant tube would naturally lead to a discussion of the symptoms of extra-uterine pregnancy, but as I have already occupied too much time and

trespassed on your patience, I shall not discuss the symptomatology, except in so far as it comes into the discussion of the treatment, to which I now pass.

In considering the treatment of any disease, it is customary to raise first the question of prevention. Is it possible to prevent extra-uterine pregnancy?

In the individual case, we may at once answer in the negative. This disease occurs in women who have had no illness, who are in perfect health, as frequently as in those who have suffered from some former ailment. It comes without our knowing why. But it is perhaps the case that it occurs more frequently in our cities than in country districts, and in the lower classes more frequently than in those who lead a less harassing existence. It is supposed also by some, as I have already stated, that it is in reality a reversion to an earlier type, such as is apt to occur in the degenerate members of a species. If these are really facts, they point to the prevention of extra-uterine pregnancy as lying like that of so many other diseases in the maintenance and promotion of a sound national health. In our practice, however, this does not lead us far, and for our present needs we may consider the prevention of the disease as beyond our province.

As has been often remarked, the life-history of an extra-uterine pregnancy divides itself naturally into two periods—one before and one after rupture. In the former of these periods, there is usually nothing to suggest to the patient the presence of any abnormal condition; but if by some fortunate accident an examination of the pelvis is made, it should usually be possible to recognise the condition, and the following are the data on which the diagnosis would be based:—

1. A possibility of pregnancy, rising to a probability, if any of the usual early symptoms of pregnancy are present.

2. A slight enlargement and softening of the uterus, especially if this enlargement is less in amount than the period of supposed pregnancy would lead us to expect.

3. The presence of a pulsating tumour in one or other side of the pelvis occupying the situation of the tube, especially if the tube can be felt to pass directly into the tumour from the angle of the uterus.

I consider that any case in which these three conditions are present should be regarded as a case of extra-uterine pregnancy. It is admittedly only a probable diagnosis. Seldom, indeed, does diagnosis in any region reach absolute certainty, but the probability here is very great. It would still be great even if we had only the first and third of these

conditions present, *i.e.*, the probability of pregnancy and the presence of a lateral pulsating tumour.

The probability would be less if we had no suggestion of pregnancy and no enlargement of the uterus, but simply a pulsating tumour in the region of the tube. I should then be inclined to lay special stress upon the character of the tumour—its softness, as contrasted with pyosalpinx; its more distinctly lateral position, the pyosalpinx tending to pass more behind the uterus; its lesser tenderness; its mobility, as contrasted with the more fixed pyosalpinx; and its less elongated shape. These physical characters, with an absence of a history of previous pelvic peritonitis and the absence also of febrile reaction, would raise the probability to a very high degree, and would justify our acting as if the existence of an extra-uterine pregnancy were undoubted.

Supposing, then, that we have to deal with a case of extra-uterine pregnancy before rupture, what ought to be our action? Undoubtedly, we should remove the pregnant tube. A patient with this condition is in a position of the greatest danger. She has fallen down a precipice upon an explosive mine, the fuse of which is ignited, and in a short time the explosion must inevitably occur. And for her the explosion means certain, and it may be fatal injury. The chances of its being fatal are, perhaps, about 50 per cent. Her only way of escape is to climb the precipice and avoid the mine, but this, too, is dangerous. The danger, however, is enormously less, amounting, with our present methods of abdominal section, to perhaps 1 per cent, or say one-fiftieth of the risk of waiting for rupture. There can be no hesitation as to the alternative we ought to choose. The pregnant tube should be at once removed.

Suppose, however, the rupture has already taken place, we may be called to see the patient either immediately after or long after, and the question as to treatment becomes more difficult to answer.

In speaking of the catastrophe, I have used the word rupture; but we have to remember that the termination of a tubal pregnancy is frequently an abortion, and that an abortion is distinctly less fatal than a perforation. At the time of the catastrophe, however, and for some time thereafter, it may not be possible to say which has occurred, and the chance of a fatal termination being so great we ought to act in all early cases as if we were sure that rupture had occurred. There should be no delay in opening the abdomen and

removing the pregnant tube. I am doubtful of the propriety of removing the pregnant sac alone and leaving the tube. Not only is the operation prolonged thereby, but I think that however careful the operator may be there is a distinct possibility that some of the syncytium might be left and give rise to a recurrence of the hæmorrhage. There is also the additional danger of a second tubal pregnancy occurring in the maimed tube. For these reasons, I think it right to remove the tube as well as the pregnant sac.

But we may see the patient a considerable time—two or three or more weeks—after the rupture has taken place. Cases of this kind may be divided into two classes—one in which there has been uninterrupted though perhaps slow recovery—a gradual and steady absorption of the blood effused into the abdomen, a steady recovery of strength, and an absence of pain and uterine discharge; the other, in which there is a history of recurrent internal hæmorrhage, of persistent or occasional uterine hæmorrhage, of pelvic pain, of variable temperature, in short, of a disturbed, interrupted, or faulty convalescence. These two classes must be treated differently. The first class requires only careful nursing to promote their complete recovery. In some of them at least there is a complete absorption of the effused blood, and a recovery of normal pelvic functions, even if we might find on examination some adhesion and matting of the viscera in the lower abdomen as the result of the hæmatocele.

The second class demands surgical treatment as definitely as those cases which are seen immediately after rupture. If there is a tendency to recurrent internal hæmorrhage, the danger of death from acute anæmia may arise at any moment. If there is a delay in the absorption, the risk of infection of the hæmatocele is ever increasing. If there is uterine hæmorrhage, we may take it as not only injurious in itself, but as indicating a condition in the neighbourhood of the uterus to which we may appropriately give the vague name of "irritation," seeing that it is due to the presence of what is actually a foreign body in the pelvis. When absorption is going on smoothly, the processes taking place in the hæmatocele have, so to speak, come into harmony with the vital processes going on in its neighbourhood; but in the cases that are going wrong this harmony is broken, and the various processes react injuriously upon one another. Disturbed temperature, uterine hæmorrhage, pelvic pain, deterioration of health, all give evidence of this discord, and indicate that its

source should be removed lest worse results follow. Wherever the convalescence is not progressing smoothly, it is in the best interests of the patient to clear away from the pelvis the pregnant tube and the hæmatocele sac. And in doing so, I prefer to proceed by way of the abdomen rather than by the vagina.

I need hardly refer to those still later cases in which the hæmatocele sac has become infected, or in which a macerating or decomposing foetus is present in a sac full of offensive fluid. In all such cases, of course, the septic or decomposing materials must be removed, though in these cases we cannot speak of complete removal of the pregnant sac, and must be content simply with drainage after emptying.

The address was followed by a lantern demonstration, prepared by Dr. A. Louise M'Ilroy, illustrated by the following:—

I. *Structure of the Fallopian tube*—

1. Uterine end of tube.
2. Near uterine end of tube.
3. Near abdominal end of tube, showing slight erosion from salpingitis.
4. Thickened wall of tube in tubal pregnancy.
5. Thickened wall of tube in tubal pyosalpinx; epithelium eroded, round-celled infiltration of mucous membrane.
6. Tube in hæmatosalpinx, blood-clot in lumen, epithelium partly eroded. The tube on the other side was pregnant.

II. *Decidual formations*—

7. Uterine decidua in normal pregnancy, showing cells and glands.
8. Decidual cast of uterus in tubal pregnancy, showing external and internal surfaces.
9. Compact layer of decidua from cast 8.
10. Decidual cells in uterus in tubal pregnancy.
11. Decidua in tube, mucous membrane compressed and flattened out. (The decidua extended along the tube.)

III. *Villi of the chorion*—

12. Degenerated chorionic villi from uterus.
13. Ovum from uterine abortion, showing membranes and decidua; embryo lost.
14. Villi in endometrium, gained by curettage after abortion.

15. Folds of tube, slightly degenerated, to contrast with chorionic villi.
16. Villi and decidual cells from tubal mole, degenerated.

IV. *Syncytium*—

17. Syncytium and Langhans' layer from villus in tube ; high power.
18. Syncytial bud ; commencing villus in tube (high power).
19. Syncytial cells perforating wall of blood-vessel.

V. *Photographs of specimens, showing the various lesions in the tube, and showing the situation of embryo or fœtus.*

20. Rupture in between layers of broad ligament, showing embryo.
21. Tube, with external surface unbroken ; had ruptured in between layers of broad ligament, and a small embryo was found in it.
22. Mole, filling tube, rupture between layers of broad ligament.
23. Tubal abortion, mole protruding from fimbriated extremity of tube, which encircles it like a collar. Ovary below.
24. Tubal abortion ; embryo in abdominal cavity, cord passing through the abdominal ostium into the tube to be attached to the placenta, which lies in the tube.
25. Site of tubal rupture, tubal folds degenerated, villi in blood-clot.
26. Site of tubal rupture, mole with villi, strands of muscle fibre thinned out.
27. Erosion of tube wall by chorionic villi.
28. Rupture ; mole showing embryo in interior.
29. Rupture ; tubal pregnancy, with twins in uterus.
30. Rupture, showing placenta and fœtus.
31. Rupture, with fœtus in peritoneal cavity, parts shown in their relation to the uterus, which was obtained *post-mortem*.



THE ACTION OF POISONED ARROWS OBTAINED  
FROM THE AROS DISTRICT OF NIGERIA.<sup>1</sup>

By FRANK CHARTERIS, M.B.

LAST spring two sets of poisoned arrows were sent to the materia medica department of the University, with the request that their action should be investigated, and the nature of the poison determined. Dr. Teacher, who brought the arrows, stated that they had been collected by Mr. Scott in the expedition against the Aros. The account given by Mr. Scott was somewhat imperfect, but it appeared that the arrows were of two types—a smaller variety in use in the inland districts, and larger arrows employed by the tribes living nearer the coast. As regards the activity of the two sets, Mr. Scott indicated that the smaller variety were dreaded chiefly for the poisonous action, while the larger arrows were feared more for the large wound which they inflicted. Both sets of arrows were well made, consisting of light wooden shafts, tipped with long iron points, which, in most cases, were barbed. The poisonous substance was applied to the iron points in the form of a thin coating about one-sixteenth of an inch in thickness. The consistence of this coating differed in the two types. The smaller arrows were covered with a very dry and brittle substance, while in the larger arrows the substance was not brittle, but tough and leathery, resembling in consistence one of the official extracts of the *Pharmacopœia*.

The dry, brittle poison was much less soluble in water than the other form. The small arrows proved to be poisoned with a cardio-muscular poison belonging to the digitalis group. In all probability the actual poison employed was strophanthus. The poison was scraped from the arrows and treated with water. Though only a small amount of the substance dissolved, this solution proved highly toxic for frogs. Injected into the dorsal lymph sac, it caused no irritation. For about fifteen minutes or so the frog remains perfectly well. Then it begins to gasp, and is unable to turn over when placed on its back. At the same time, it is noted that the pupils become contracted. The reflexes persist. Fibrillary tremour over the pectoral muscles and lower jaw commences. The frog dies within

<sup>1</sup> The expenses of this investigation were met out of a grant from the Carnegie Institute.

an hour without developing any spasms or convulsions. Rigor mortis sets in very rapidly. *Post-mortem*, it is found that the muscles with which the solution has been brought into contact do not react to the strongest electrical current. Thus, after dorsal injection, the erectors of the spine and, as a rule, the muscles forming the flanks of the abdomen are dead. Elsewhere the skeletal muscles react, and the cord and nerves conduct electrical stimuli. The reaction of the muscles is faintly acid. The heart is characteristic. The ventricle is firmly contracted in extreme systole, and white in colour, as if all the blood had been squeezed out. The auricles are, as a rule, dilated and full of blood.

Now, this finding shows that we are dealing with a substance which, when locally injected, acts as a muscle poison, and, after absorption, kills the heart, causing the ventricle to stop in aystole. This is the characteristic action of bodies belonging to the digitalis group. The action of the poison on the heart could be readily studied in pithed frogs. The central nervous system is destroyed, the thorax opened, and the heart exposed. The application of a few drops of a strong solution to the pericardium rapidly slowed the heart. Thus, a heart beating at 46, after two minutes fell to 36. At the same time the action becomes irregular; after every two or three beats there is a pause in diastole. At this stage the auricles are making one or two beats for each ventricular beat, but in a few minutes the opposite action is noted. The ventricle tends to remain in a semi-contracted form, and relaxation is never complete. At a later stage the only contraction is of a vermicular peristaltic nature, and eventually the heart becomes arrested with the ventricle in extreme systole. Neither muscarine nor atropine is able to start the heart again.

The poisonous element proved to be soluble in alcohol. The alcoholic solution was slightly green in colour. Poured into excess of ether, it gives a copious white precipitate. The dried poison was therefore first treated with ether, which removes fat and some colouring matter. It is then extracted with alcohol. On evaporation, the alcoholic solution leaves a clear, glassy residue, which did not crystallise very perfectly. This residue is readily soluble in water, and produced the poisonous action in frogs. Boiled with a drop or two of hydrochloric acid, the resulting solution reduces Fehling's solution, proving that the residue is glucosidal in its nature. A watery solution poured on to strong sulphuric acid developed a green colour, which resembled that obtained in a similar way

with tincture of strophanthus. It seems, therefore, extremely likely that the smaller arrows were poisoned with strophanthin.

The action of the larger arrows was similar on frogs, viz., a local muscular poison which, after absorption, kills the heart. The active principle is somewhat different, however. As with the smaller arrows, it is insoluble in ether, but soluble in water and alcohol. The dried alcoholic extract is slightly coloured, but does not dry readily. It proves to be a glucoside which has the typical toxic action on the heart and muscles. With sulphuric acid no green tinge is found, but the solution becomes reddish brown. It is possible that the active principle in this case may be pseudostrophanthin or ouabaine. In rabbits it causes no irritation locally, but after subcutaneous injection the rabbit is rapidly affected. Muscular weakness is shown by the animal tending to slip down and recovering itself with a jerk. There is slight fibrillary trembling of the muscles of the neck. Towards the end the heart, which was at first rapid, became slow and irregular. Just before the end there is a brief terminal convulsion, possibly due to anæmia of the brain. Respiration is unaffected.

Immediately after death the ventricles are seen to be arrested in systole, while the auricles are still twitching. In rabbits poisoned with the smaller arrows muscular weakness is not so prominent a feature. Apparently nothing happens for about an hour. Then the animal suddenly becomes uneasy, runs round its cage, and drops down dead. The condition of the heart is similar to that described in the case of the larger arrows.

It is known that strophanthus in various forms is extensively employed for poisoning weapons in Western Africa. Fraser<sup>1</sup> showed that it was used for this purpose in the regions about Lake Nyassa. I examined some large throwing spears got from the upper Benue river, and found that they also were poisoned with strophanthus. Lewin,<sup>2</sup> who systematically examined the arrows in the Berlin museums, found the use of strophanthus very general in Western Africa. Further south the Hottentots and Bushmen use hæmanthus toxicarius, euphorbium, or acokanthera venata, or the poisons of snakes and spiders.

<sup>1</sup> *Royal Society Edin.*, vol. xxxv.

<sup>2</sup> Virchow's *Archiv*, 1894.

CURRENT TOPICS.

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**THE GENERAL MEDICAL COUNCIL AND THE UNIVERSITY OF GLASGOW.**—The Medical School of Glasgow has reason to be proud of the report by the visitor and inspector to the General Medical Council on the final examination for the degrees of M.B. and Ch.B. Sir Hugh Beevor and Mr. Thomas Bryant attended the examination held in June and July of 1904, and they reported all the examinations in Medicine and Midwifery to have been "most satisfactory, whilst those of Surgery (Clinical, Oral, and Practical) had reached a standard that can hardly be beaten, and it would be satisfactory if it could be equalled." In another part of their report they express the opinion that "this practical examination in Surgery is the most complete and satisfactory of which we know. It was admirably designed and equally well carried out, and for this Sir W. Macewen deserves the full credit. A full supply of the necessary material has doubtless enabled him to bring about so satisfactory a result. In the majority of medical schools, if not in all other medical schools, such advantages could not be obtained."

**LOCAL GOVERNMENT BOARD APPOINTMENT.**—Dr. Frederick Dittmar has been appointed Medical Inspector to the Local Government Board for Scotland. A son of the late Professor of Chemistry in the Andersonian University, the new inspector received his education in Glasgow, in the University of which he graduated M.A. and M.D. After acting as resident assistant in the Victoria Infirmary, Dr. Dittmar was appointed as an assistant to Belvidere Fever Hospital, and subsequently he became assistant to the Medical Officer of Health for Glasgow. In February, 1903, he was appointed Medical Officer of Health for Scarborough, and he has continued in that office till now. His many professional friends will hear with pleasure that he now returns to Scotland, and we but voice their sentiments when we congratulate him on his obtaining his new post—a well-merited recognition of his sterling worth and wide experience.

**THE CENTRAL BRITISH RED CROSS COUNCIL.**—This Council was started in January, 1899, with the full approval of the War

Office, and is now officially recognised by all Foreign Chancelleries as the central body authorised to deal with Red Cross matters throughout the Empire. Her Majesty Queen Alexandra is president, and the Council is constituted by representatives from the following:—The National Society for Aid to the Sick and Wounded in War, the St. John Ambulance Association, the St. Andrew's Ambulance Association, the Army Nursing Service Reserve, the Admiralty and the War Office. Its functions are (1) to act as the recognised medium of communication with the Red Cross organisations of other countries, (2) to be the medium of official communication between the naval and military authorities and voluntary aid societies and their branches, (3) to promote the extension and organisation of voluntary aid resources throughout the Empire. It is important that organisation should be secured in time of peace, so that if war comes it will not find us unprepared. Shortly after the Council was established the question of how best to secure organisation of the voluntary aid resources of the country came up. The work of the Council in this direction was interrupted by the outbreak of the South African War; but the Council has again taken up the work, and the scheme which it has now in hand is the formation of local committees throughout the country. In Scotland the establishment of Local Committees has been undertaken by the Red Cross branch of the St. Andrew's Ambulance Association. The Council now appeals to the public for funds "sufficient to finance the work for the first few years, at the end of which time it is hoped that the work of organisation will have developed sufficiently to be self-supporting."

Such is, briefly, the scheme in hand, and we feel that it recommends itself without comment on our part. Donations and annual subscriptions of 5s. and upwards should be sent to the honorary treasurer, Sir John Furley, C.B., 14 Evelyn Gardens, South Kensington.

THE LATE DR. J. B. RUSSELL.—The following sentences are taken from an editorial article entitled "A Great Sanitarian" in the *Boston Medical and Surgical Journal*, 17th November, 1904:—

"In the death of Dr. Russell at Edinburgh, 22nd October last, the world has lost the last of that famous group of great men who have made modern sanitary science what it is to-day, and who so justly earned the gratitude of mankind for their splendid work as pioneers in improving the conditions of living, and mitigating the ravages of death and disease, to

which they had devoted essentially their whole lives. Chadwick, Farr, Lindley, Rawlinson, Sutherland, and Simon had already found their well-earned rest.

"Sir Edwin Chadwick had said of Glasgow, in his epoch-making report—'It might admit of dispute, but on the whole it appears to us that both the structural arrangements and the conditions of the population of Glasgow were the worst of any we had seen in any part of Great Britain,' and Dr. Sutherland, of the General Board of Health, had emphasised that opinion seven years later by saying—'All sanitary evils exist here in perfection.' Dr. Russell found his opportunity, and began his reforms on these principles, which he adopted for his life: 'Firstly, by making up his mind that a thing was possible; secondly, by making up his mind that it should be done; and thirdly, by resolute pegging away at the doing.'"

### NEW PREPARATIONS, &c.

THE following have been received from Messrs. Burroughs Wellcome & Co., London:—

*Tabloid Quinine and Strychnine.*—Each tabloid contains quinine bisulphate 1 grain, with strychnine sulphate  $\frac{1}{80}$  grain.

*Biondi-Ehrlich-Heidenhain Triple Stain.*—For the production of this stain, two kinds of soloids are supplied. One soloid of Ehrlich triple stain is dissolved in 25 c.c. of distilled water, and one soloid of acid fuchsin in 2 c.c. of distilled water. The two solutions are then mixed, and the stain is ready for use.

*Tabloid Donovan Solution, min. 5 (0.296 c.c.).*—The conditions in which arsenious iodide is usually prescribed are generally of such a nature as to demand more or less protracted treatment. Tabloid Donovan Solution has been introduced to provide a reliable and convenient means of administering this agent, and presents such a degree of compactness that a bottle containing 100 can be comfortably carried in the waistcoat pocket, and hence doses may be taken regularly when the patient is following ordinary pursuits. Each product represents min. 5 (0.296 c.c.) of liq. arsenii et hydrargyri iodidi, P.B., containing arsenious iodide and mercuric iodide of each gr.  $\frac{1}{42}$  (0.003 gm.). *Dose*—One to four, dissolved in a wine-glassful of water, and taken as may be necessary.

**MEETINGS OF SOCIETIES.**

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**GLASGOW MEDICO-CHIRURGICAL SOCIETY.**

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SESSION 1903-1904.

MEETING XIV.—13TH MAY, 1904.

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*The President, DR. DAVID NEWMAN, in the Chair.***I.—CASE OF EXCISION OF A STRANGULATED PROLAPSED RECTUM, SIGMOID FLEXURE, AND DESCENDING COLON IN A CRETIN: RECOVERY.<sup>1</sup>**

BY DR. ROBERT KENNEDY.

The patient, a male, aged 28 years, was a cretin, 39 inches in height, presenting coarse skin, thick lips, a low degree of intelligence, &c., and had suffered for years from prolapse of the rectum, brought about apparently by chronic constipation. Although the rectum prolapsed so easily, it had usually been easily reduced by the patient's friends, although sometimes medical aid had been required. The prolapse gradually increased in size, until quite an alarming amount of bowel was in the habit of making its appearance after a stool involving much straining. It was on such an occasion as this, on the 1st of January last, that the bowel came down to a greater extent than usual, and Dr. Westwood, who had on former occasions reduced the prolapse quite easily, and who was again sent for on this occasion, found exceptional difficulty in making the reduction. As he expected, the prolapse soon returned, and on making further attempts to reduce the bowel he found that it was no longer possible to do so, and therefore recommended the patient's removal to the hospital. The patient was admitted to the Western Infirmary on 2nd January, and the surgeon into whose wards he was taken not being available, I was sent for, and the case thus came under my charge.

Since Dr. Westwood had seen him the bowels had not again moved, and it was stated that flatus had not been passed, but there was no sign of abdominal obstruction. His general condition, however, was exceedingly bad, as he presented the

<sup>1</sup> The patient was shown at the meeting.

signs of one who was badly collapsed. Thus, his pulse was imperceptible at the wrists, his cardiac sounds were weak, irregular, and variable in rate; his face was of an earthy pallor, and his pupils dilated; his lips and finger nails were cyanotic; his temperature subnormal.

From the anus there projected a huge prolapse, measuring about a foot and a half in length, dusky red in colour, swollen with œdema, and presenting here and there patches of a dark tint representing areas of superficial gangrene. Proximally, the



Strangulated prolapsed bowel (rectum, sigmoid flexure, and descending colon), measuring 22 inches in length, excised from a cretin.

mass was dense and hard and bulky. The finger inserted into the margins of the greatly dilated anus could not be passed higher than an inch till stopped by the reflexion of the rectal wall.

As regards the treatment which would be required, Dr. Westwood's report was that taxis had failed. I, however, tried this method once more, and also failed. To have left the prolapse out in the condition in which it was—that is, apparently undergoing strangulation—would have been to have given the patient no chance at all. On the other hand,



in the collapsed condition in which I found him, if excision of the mass were attempted there appeared to be very little hope of success, and yet this was the only chance of saving his life. I had seen him just after his admission, and thinking that the collapse might be due to his transference to hospital, I held off for an hour or two in the hope that he might rally, giving directions to have the prolapse prepared for operation. However, he did not rally, and his condition when I saw him again was, if anything, worse, and it was therefore decided to delay no longer. I, therefore, had the patient anæsthetised, gave taxis one more trial without success, and then as quickly as possible removed the entire prolapsed mass in the usual way. Thus, the outer tube, *i.e.*, the rectum, was incised, the peritoneal pouch within the prolapse examined, and the rectum then divided about 1 inch from the anal margin, so as to save the sphincter. The vessels were then ligatured. The large mass of mesentery necessarily dragged down to supply so much of the gut as the prolapse represented was then ligatured off in several detachments, and the colon then cut across, and the prolapsed mass removed. The colon was then united by catgut sutures to the small collar of rectum which remained. The line of suture was then pushed back within the anus, and the operation, which had lasted only about ten minutes, was finished.

The patient was rather better next day, and after that made a rapid recovery.

After the patient began to move about he was troubled with involuntary motions; but this by and bye improved, and for a considerable time now he has had control of the bowel, and never gives any trouble in that way. The prolapse also has never returned, and the anus has resumed a normal appearance and size, and the sphincter action is good. A digital examination reveals only a narrower bowel than normally should be present, *i.e.*, the ampulla of the rectum is not represented by the bit of colon which has replaced the rectum. Otherwise there is no indication that so much bowel has been removed.

The bowel which was removed measured 22 inches without stretching, and represented the entire rectum, sigmoid flexure, and a considerable portion of the colon, certainly, at least, the entire descending colon. The greater part of it exhibits the three separate longitudinal bands characteristic of the large intestine above the rectum.

This is the largest prolapse which has come under my observation. I have excised on previous occasions a prolapse representing nearly the whole rectum, and on several occasions

the usual smaller prolapses. In the small prolapse the peritoneal cavity need not be opened during the operation, because only the recto-vesical or recto-vaginal pouch is met, the posterior and lateral pouches not being seen at all. The pouch in front can usually be simply pushed back, and this gets rid of it without opening, and the operation is thus not much more serious than an ordinary Whitehead's operation for piles. It is necessary, however, to keep the line of sutures from contact with any other part, and this I do by introducing about 2 inches of a large indiarubber tube surrounded by iodoform gauze into the anus, and fixing it there by a stitch.

This operation I regard as more effective and more free from risk than any method of rectopexy, and certainly more effective than the methods of dealing with prolapse by removing wedges from the anus, placing a ring of paraffin round the anus subcutaneously, &c. Of course, for irreducible strangulated prolapse it is the only method which I think can be considered.

## II.—CASE OF LARGE ABSCESS OF THE BRAIN: OPERATION: RECOVERY.<sup>1</sup>

BY DR. ROBERT KENNEDY.

J. M., aged 30, cooper, was admitted to Ward XX of the Western Infirmary on 24th November, 1900, in a semi-conscious condition.

The following history was obtained:—He had been troubled with an offensive discharge from the right ear for five years. This, however, never caused him any inconvenience, except that due to almost complete deafness in this ear. A fortnight before his admission he was exposed to cold, and to this his illness was attributed by his friends.

He first experienced severe pain in the region of the discharging ear. The discharge from the ear became less in amount simultaneously with the onset of pain. He had had one or two rigors, but had not vomited.

On the morning of the day on which he was admitted to hospital his wife stated that he lay quiet, seemingly having less pain, answering slowly but correctly questions which were shouted to him; but was unable to recognise any of his friends.

*Examination.*—The patient, on being seen, was lying in a semi-conscious condition, with pinched features, and slow and shallow breathing. When shouted to, he could be roused and

<sup>1</sup> The patient was shown at the meeting.

made to answer after an interval in a slow manner, sometimes leaving the answer incomplete.

His pulse was full, and numbered 54 per minute. His temperature was 99° F., and his respirations 20 per minute. His right pupil was fully dilated and fixed, not contracting on bringing a light near to it; the left pupil had apparently normal contractility. There was right divergent squint. The ophthalmoscopic examination of the right eye showed optic neuritis, but the left eye was apparently normal.

The ears were examined, and a foetid discharge was found to come from the right ear, and the tympanic membrane was gone. On the left side there was no discharge, but the drum presented a large perforation. There was no sign of swelling around the upper portion of the jugular vein, or over the mastoid or elsewhere.

On causing him to make movements of the face by pinching him, the left side (*i.e.*, the opposite to the lesion) was seen to be partially paralysed. While the muscles of the brow and the orbicularis palpebrarum retained their movement, the lower part of the face was distinctly paralysed.

The patient was then examined for signs of paralysis elsewhere, and it was found that the only other part affected was the left arm, which was moved with much difficulty by the patient when, on being roused, he attempted to exert himself.

The breath had a bad odour.

The reflexes in general were exaggerated.

The history and the examination left little doubt as to the presence within the skull of considerable increase of pressure. Thus, there was the history of headache and rigors, and of the gradual onset of unconsciousness. The examination showed a low temperature and a slow pulse. There was evidence of pressure on the cortical centre for the left side of the face, and to a lesser extent on that for the left arm, and also evidence of pressure on the third nerve of the right side, as shown by the dilated and fixed pupil and divergent squint on the right side. These observations, taken in conjunction with the five years' history of foetid discharge from the right ear, and its sudden cessation on the commencement of the headache and rigors, all pointed to the presence of an abscess of the brain; and, indeed, to a large one in the right temporo-sphenoidal lobe.

*Operation.*—About an hour after the patient was admitted the operation was performed—*i.e.*, as soon as he had been prepared for operation. The mastoid antrum was first opened, and a small quantity of pus and cholesteatomatous masses

were removed. On the bone being sufficiently cleared away, it was seen that there was a small erosion of the tegmen antri, which lodged a small quantity of pus. The skull was therefore opened in this situation by a small trephine, and it was found, on removing the disc of bone, that the dura, which was exposed, was dull, non-pulsatile, and, indeed, necrosed. The opening in the skull was then enlarged, and the necrotic dura incised. It was found adherent to the temporo-sphenoidal lobe below, and, on this being incised to the depth of about one-eighth of an inch, exit was given to a large quantity of highly foetid dark brown pus, containing gas and broken-down brain substance. On inserting the forefinger into this cavity, it was found that it was unable to reach the wall on its inner aspect, and could just touch the wall anteriorly, posteriorly, and superiorly, so that the abscess cavity had very large dimensions, containing, indeed, fully 4 ounces of pus.

As soon as the pus escaped from the cavity, the pulse was noticed to go up at once from 54 per minute to 78 per minute on account of the relief from intracranial pressure. The cavity was filled with iodoform gauze, and drained in the usual way.

On the following day the patient was found to be rather brighter, being less drowsy, and making answers to questions with greater promptitude. His left facial paresis and difficulty in moving the left arm had greatly improved, and the right pupil was less fully dilated.

By 28th November, four days after the operation, he was greatly improved, and was asking questions about himself. Temperature and pulse normal.

On 8th December his eyes were examined. Optic neuritis was still present in the right eye, and there was still divergent squint on right side. The right pupil was still a little dilated. He had some difficulty in detecting the number of fingers held above and also to the left of his eye.

On 21st December the patient was well. The right pupil was still slightly dilated.

By 28th December—*i.e.*, five weeks after operation—the pupils were equal, and responding well to light and accommodation. Patient was well.

On 14th March the condition of the mastoid was examined, and the mastoid operation finished off according to the method of Zaufal.

On 12th April he was sent home with the wound completely cicatrised.

After the patient returned home, he picked up quickly and returned very soon to his work.

On 23rd April, 1904—*i.e.*, about three and a half years after the operation—he was still in the best of health, and the following report was obtained:—

The ear never discharges and he hears fairly well, and a watch which can be heard by a normal ear at 36 inches can be heard by his right ear at 13 inches, and by his left (which presents a large perforation in the drum) at 20 inches.

Above the right ear can be seen a scar and the margin of the bone can be felt  $1\frac{1}{4}$  inch above the external auditory meatus.

The condition of the eyes, as reported by Dr. Capie, is as follows:—

The patient reads Jaeger No. 1 with both eyes. V. A., right,  $\frac{20}{20}$ ; V. A., left,  $\frac{20}{20}$ . Consensual pupillary reflexes present; direct also present. Reaction to accommodation normal. The movements of the eyes are normal. The field of vision of the right eye, roughly estimated, is normal, as is also the left. Colour sense is normal.

*Ophthalmoscopic examination.*—Both retinæ are normal, the only suggestion of a difference being that the right disc is to a trifling extent paler on the inner aspect.

The interest of this case lies in the large size of the abscess in the temporo-sphenoidal lobe, together with the considerable amount of brain substance which was mingled with the pus, and also in the seemingly complete recovery which the patient has made. It is possible, and, indeed, probable, that the largeness of the cavity was gained by compression of the brain substance in addition to destruction, and that, when the fluid was removed, the cavity was filled up by re-expansion of the surrounding brain tissue as well as by production of granulations.

### III.—CASE PRESENTING A SINUS WHICH TRAVERSED THE CRANIUM COMPLETELY, AND CONTAINED SOME PORTIONS OF A STRAW HAT CARRIED INTO THE BRAIN BY MEANS OF A SPIKE: OPERATION: RECOVERY.

By DR. ROBERT KENNEDY.

The patient, a male child, aged  $3\frac{1}{2}$  years, was admitted to the Western Infirmary on 13th December, 1901, with cerebral symptoms of a few days' duration. The following history was obtained:—

About three and a half months previously, the patient fell on an iron spike, which entered the head fully an inch above the right ear. For two or three days he was confined to bed, but soon was able to go about apparently quite well. The wound above the ear was apparently looked upon as a very trifling affair, for no attention seems to have been paid to it. By and bye, the patient's mother noticed that pus was issuing from this wound. It was then discovered by the medical man who saw him that there was a sinus above the right ear which was discharging pus, but the patient was apparently quite well, so things were allowed to take their course.

On the day before I saw him, *i.e.*, about three and a half months after the accident, it was noticed by his mother that he was feverish and drowsy, and that he complained of pain in his head. He was also sick and vomiting. When I first saw him, these symptoms were present, and his temperature was 102° F., and his pulse somewhat rapid. I therefore decided to anæsthetise him and examine the sinus, which presented fully 1 inch above the external meatus, and which showed pouting granulations. I therefore opened up the soft parts, and found a ragged aperture in the skull, nearly large enough to admit the forefinger, and on inserting a director into this a small quantity of pus escaped. A probe was then passed into the sinus, and it was found that, without using any force at all, it passed on until it had almost disappeared into the sinus, finally impinging against the opposite side of skull with a very distinct impact.

On ascertaining the degree of resistance of the walls of this extraordinary sinus, it was found that they were yielding in all directions, *i.e.*, that the sinus was not close to bone at any point except at its termination. The aperture in the skull was then enlarged by means of gouge-forceps, &c., and the sinus cautiously explored. It was then found that it contained some foreign material, which, on being removed, proved to be short pieces of straw. This material was lying in the sinus about an inch and a half from its commencement. On clearing out the straw completely, the cavity left was treated by packing with iodoform gauze, a narrow strip being carried in by a sinus forceps so as to reach the bottom of the sinus at the opposite side of the skull.

On the day following this operation, the child was much improved, and soon all the cerebral symptoms passed off.

The wound gradually cicatrised, and by 28th February, *i.e.*, two months after the operation, the wound was completely closed.

It was ascertained afterwards that the patient was wearing a straw hat at the time of the accident, and that the spike, before entering the patient's head, had transfixed the straw hat, thus carrying in some portions of straw in front of it.

This patient showed no unfavourable symptoms after this operation, and when examined recently (two years and four months after the operation) the patient was found to be a particularly healthy boy without any defect either of body or of mind.

I was unfortunately unable to obtain the spike which inflicted this injury, and therefore could not form a definite opinion whether the long sinus represented the track traversed by the spike, or whether the sinus was a thing of after-formation from a wound of much less depth.

As regards the relationship of this sinus to the cranial contents, there is no doubt from the position of the scar that the sinus traversed the temporo-sphenoidal lobe of the brain.

As regards its further course, I think it most likely that it slipped along on the upper aspect of the left side of the tentorium, so as in this way to find an easy road to the opposite side of the skull. The only symptoms which the patient exhibited were due apparently to the retention of pus, *i.e.*, to the exit of the sinus being blocked, which brought on drowsiness, febrile disturbance, headache, sickness, and vomiting.

#### IV.—CASE OF TRAUMATIC EXOPHTHALMUS PULSANS: LIGATURE OF COMMON CAROTID: CURE.

BY DR. ROBERT KENNEDY.

Dr. Kennedy's paper will be found as an original article in our issue for December, 1904, at p. 426.

#### V.—CASE OF CHRONIC BILATERAL OTITIS MEDIA PURULENTA WITH INFECTION OF THE MASTOID CELLS: MASTOID OPERATION ON BOTH SIDES: VERY MARKED IMPROVEMENT IN HEARING.<sup>1</sup>

BY DR. ROBERT KENNEDY.

A patient, aged 14, a hammer-boy, was admitted to the Western Infirmary on 20th October, 1900. Since early childhood, he had suffered from constant discharge from both ears, this being consequent upon scarlet fever. As long as he

<sup>1</sup> The patient was shown at the meeting.

remembers, he has been exceedingly deaf, being unable to hear conversation unless shouted in a loud voice. He never, however, had attacks of pain until July, 1900, when he had a rigor, followed by severe pain in the left ear and swelling over the mastoid of the same side. After this the discharge from the left ear was diminished.

About a week before his admission to hospital, his right ear was painful and swollen, but this was not accompanied by diminution of discharge. He also about the same time had considerable pain over the upper part of the sterno-mastoid of the left side. He had had no recurrence of the rigors, but complained of pain in the head more or less since these attacks.

Examination revealed the left ear displaced downwards, outwards, and slightly forwards. There was considerable swelling behind the ear over the mastoid region, the skin over this region being red and congested, the same condition also extending downwards on the skin covering the upper end of the sterno-mastoid. No tenderness existed over this region, the tenderness which existed in this situation a week previously having disappeared. There was slight discharge of pus from the external auditory meatus. No fluctuation could be made out over the mastoid process, and the cervical glands were not enlarged.

As regards the right ear, it was normal in position. Over the mastoid process there was slight swelling, marked congestion, and considerable pain and tenderness. The discharge from this ear was more copious than from the left. The cervical glands were not involved.

The temperature ranged between normal and  $99.6^{\circ}$ , and the pulse-rate was about 68 per minute.

The hearing power in both ears was greatly reduced, the watch not being heard by either ear until brought into contact with the auricle. There were no other noteworthy symptoms present.

On 1st November, 1900, the left side was operated upon. The operation performed was Zaufal's. There was well-marked periostitis over the entire mastoid, but no pus. The mastoid antrum and cells were found to be full of pus and cholesteatomata, but the pus had not opened into the neck in the digastric groove, as was feared at the preliminary examination of the patient. The bone was gouged out until the antrum and cells and tympanic cavity and bony external meatus presented one cavity. The tegmen tympani and antri, and the bone over the sigmoid sinus, were unaffected.



A fortnight later the right mastoid was opened up, and after clearing out the purulent contents of the tympanum and antrum, the cavity was grafted by a Thiersch's graft. Some days later a slight facial paralysis commenced to make its appearance on the right side, and this gradually deepened into complete paralysis, from which a gradual recovery is now almost complete.

At the present date, *i.e.*, three and a half years after the operation, the ears are both completely cicatrised, and there is no discharge. The left ear shows an attempt at reproduction of the tympanic membrane. The hearing power is now very good, and he can follow ordinarily spoken language. The right ear hears the watch at 14 inches, and the left ear hears it at 13 inches, the watch being heard by a normal ear at 36 inches. This contrasts strongly with the condition before operation, when the watch could not be heard until brought into contact with the auricle.

In almost all of my series of mastoid operations, the same recovery of hearing power has occurred, but the effect is not so striking on account of the fact that in the great majority of cases only one ear has been affected, hearing power having been normal in the sound ear. I, therefore, bring this case forward, because, on account of the mastoid operation having been performed on both sides, and of hearing having been previously lost in both ears, the recovery of hearing is capable of being more easily demonstrated.

#### VI.—MYCOSES, WITH SPECIAL REFERENCE TO MYCOSIS OF THE EYEBALL.

By DR. LESLIE BUCHANAN.

Dr. Buchanan's paper appeared as an original article in our issue for December, 1904, at p. 418.

## GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1904-1905.

MEETING I.—10TH OCTOBER, 1904.

*The President, PROF. ROBERT MUIR, in the Chair.*

## I.—TWO CASES OF MUSCULAR ATROPHY OF THE PERONEAL TYPE.

BY DR. T. K. MONRO.

Of the various types of muscular atrophy which are chronic in their course and progressive in their tendency, two principal groups have long been recognised.

1. In the *first group* there is degeneration of the spinomuscular motor neurons, viz., of the motor cells of the anterior horns with their axis-cylinder processes, and the axis-cylinders of the motor nerves into which these processes are continued. The affected muscles waste in consequence of the wasting of these neurons. The muscular atrophy is secondary to the degenerative lesion in the nervous system.

2. In the *second group* there is no lesion of the nervous system. The atrophy of the muscles is primary, and results from a congenital lack of developmental power in the muscular tissue. As the individual grows, the muscles may, for a time, keep pace with the other tissues, but at length they fall behind, and having once done so, they tend to undergo atrophy. In many cases the wasting of the muscular fibres is accompanied by overgrowth of the interstitial tissue, and in the latter an excessive deposition of fat may take place. The muscular atrophies belonging to this group are spoken of collectively as muscular dystrophy. They include three principal varieties:—(a) The most familiar is *pseudohypertrophic* paralysis, in which the calf-muscles, the infraspinati, and other muscles become abnormally large through great accumulation of fat in their interstitial tissue, though the muscle-fibres themselves are wasted; (b) a second variety is the *juvenile* type, which begins about puberty, and involves the muscles of the upper arm, shoulder-girdle, trunk, pelvic girdle, and thigh; (c) the third variety is the *infantile* or *facio-scapulo-humeral*, which may commence in childhood,

and involves the orbicularis oris and orbiculares palpebrarum as well as other muscles.

Since muscular dystrophy is a developmental disease, it is not surprising that it begins in early life, and frequently attacks more than one member of a family; whereas spinal muscular atrophy is seldom met with under such circumstances.

In 1886, Charcot and Marie in France, and Howard Tooth in England, published independent descriptions of a variety of progressive muscular atrophy which resembles the developmental group in beginning in early life, and in tending to run in families, while differing from these in the distribution of the wasting, in the fact that it sometimes follows measles, and in being sometimes associated with evidences of neuritis, which may involve sensory as well as motor fibres. The wasting in this more recently recognised variety is commonly first observed in the muscles supplied by the external popliteal or peroneal nerve, and the disease is generally known by the name applied to it by Tooth, viz., the *peroneal* type of muscular atrophy. Though occasionally arrested at an early stage, the wasting tends to spread to the upper limbs. The distal parts of the limbs suffer most.

The pathology of this disease is still obscure, but peripheral neuritis has been found in more than one instance. The anterior horns have been found normal, but sclerosis has occasionally, though not invariably, been discovered in the posterior columns of the spinal cord. It may be that either in the nerves alone, or in both the nerves and the muscles to which these nerves are distributed, there is a lack of developmental power comparable to that which is recognisable in the muscles in the case of muscular dystrophy.

The two cases now to be shown appear to be examples of this peroneal type of muscular atrophy. The boy is a patient in my wards in the Royal Infirmary. His sister is a patient in the East Park Home for Infirm Children, and for the opportunity of showing her to this Society I am indebted to the kindness of Dr. Wilson Bruce, the visiting physician to that institution.

CASE I.—W. F., 13, schoolboy, was admitted to the Glasgow Royal Infirmary on 5th September, 1904, on account of difficulty in walking.

He had measles when 8 years old, but had no other trouble till the present illness began.

*Present illness: history from father.*—Beyond a tendency

to turning in of the toes in walking, nothing peculiar was ever noted about the boy until three years ago, when it was observed that the gait was stiff, and the turning in of the toes more marked. The boy also inclined to walk more on his toes than on the rest of his foot. Up till nine months ago the condition remained almost stationary, except that the gait became a little stiffer. Nine months ago it was noticed that the right leg was raised very high and then thrown forward in walking. When the foot was brought down, the toes first reached the floor, and then the outside of the foot and heel. Shortly afterwards a similar condition was noted in the left lower limb. Since then the boy has shown little inclination to walk about. At first he made no complaint of pain, but recently he has complained of pain on the inside of both knees, and it is said that these were at one time swollen.

*Family history.*—The parents are alive and well, but of a family of nine, four are dead—three died from measles and one from whooping-cough. One sister is in East Park Home suffering from a similar condition, which came on when she was 3 years old (see next report).

The boy himself says that for the past two years he has felt his legs getting weaker. After he has walked about for a bit, the toes (except the great toe, which remains extended) begin to curl up into the sole of the foot, and it hurts him to walk.

*Condition on admission.*—When patient sits up with his legs hanging, a marked drooping and rotation inwards of the foot are seen (*talipes equinovarus*). The feet cannot be rotated outwards with any degree of power. Inward rotation of the foot is good. Flexion of the ankle is weak; extension is fairly powerful. Extension of the toes is weak, but flexion is fairly good. The power of the legs above the ankles is good. Flexion of the left knee is perhaps not so good as that of the right, and patient himself thinks that the left leg is not so strong as the right. Adduction and abduction of the knees are both powerful. No fibrillary tremor is seen in the muscles of the legs. Sensation of all kinds is normal.

The gait is peculiar. The boy holds himself very stiffly when walking, and the right leg is raised up fairly high from the ground, and the toes are brought down to the ground first. In the case of the left leg, the foot is brought down more on its outside, with the heel first. Patient is quite steady when walking, and there is no ataxy.

The knee-jerks are active. The plantar reflex is flexor in type. There is no ankle clonus. The cremasteric reflex and superficial abdominal reflexes are active.

The weakness is thus confined to the lower limbs, and almost entirely to the distal portions of these. There is no tenderness or deformity of the spine.

Dynamometer—right hand, 10 kilos; left hand,  $7\frac{1}{2}$  kilos.

There is no vasomotor disturbance.

The heart, lungs, liver, spleen, superficial lymph glands, and urine are all normal.

23rd September, 1904.—Electrical reaction. The peroneal nerve as tested in the left leg responds to faradism, but the muscles show a diminished response both to faradism and to galvanism.

CASE II.—E. F., æt. 10, sister of preceding patient, was admitted to East Park Home on 20th April, 1904, complaining of inability to walk without assistance and weakness of the feet and legs.

The illness began when she was 3 years old, after an attack of measles. The first point noted about her was stiffness in walking. This slowly and progressively became worse until, about a year before her admission to East Park Home, she could hardly walk at all, and when she did try to walk she frequently fell. She could not get up from rest without holding on to something.

During the year preceding admission to the home she became rapidly worse.

16th September, 1904.—When examined patient was in a condition of tremor all over. This, the nurse stated, was due to nervousness, as such a condition is only present when she is spoken to, especially by strangers. So long as no notice is taken of her there is no tremor present.

The child is well coloured, and, apart from the feet and the lower third of the legs, is of a fairly stout build. Since admission to the home her general health has been good.

The gait could not be studied, as it was found to be impossible to get her to walk, even with assistance. It was stated, however, that when she does try to walk she can only do so with the greatest difficulty; and if any notice is taken of her she immediately seems to lose all control of herself and falls. When asked to turn round in bed, she could not turn completely without help, even when holding on to the side of the bed. No abnormality was noted in the spine or muscles of the back or shoulders.

Deformity of the feet is very marked, especially in the right foot. As she lies in bed with the lower limbs extended,

the right foot shows an appearance of talipes equinovarus, and the left foot of talipes equinus. In each case the deformity can be rectified and the foot brought into proper position by the hand.

The general tremor already noted seemed to depend mostly, so far as the legs are concerned, on flexion and extension of the hip muscles, though it also involved the hamstrings and other muscles lower down. In addition there were some fibrillary twitchings in both feet. In the left foot these were noted just below, and in the right just above, the ankle. No twitchings were seen in any other part.

The peronei muscles are wasted in both lower limbs. In the right foot the power of the peronei to oppose the tibials is almost gone. The left peronei are rather more powerful than the right. The calf muscles do not appear atrophied, but are somewhat flabby in the right leg. Girth—right,  $9\frac{3}{8}$  inches; left,  $9\frac{1}{2}$  inches. The muscles of the thighs are well developed. Girth above knee—right, 10 inches; left,  $10\frac{1}{4}$  inches.

The movements of the feet and legs show great want of power. Patient can flex either foot with difficulty, and cannot bring the foot to a right angle with the leg. This is specially marked in the right foot and leg. Extension of the foot is fairly good, but not powerful. Outward rotation of the foot is very poor. Inward rotation can be carried out better, but there is want of power in the movement. Extension of the toes (except the great toe of each foot, which is over-extended) is feeble. Flexion is also feeble.

Flexion and extension of the knee are fair, but show some lack of power. Adduction and abduction of the thighs are good. There is a certain amount of rigidity in the upper limbs, but patient can overcome this, and no defect of power can be made out.

Patient sits in bed with the head leaning forward, as if there were some weakness of the muscles of the back. The power of lifting the head from the pillow, however, both backward and forward, is fairly good.

The different forms of sensation appear to be normal, and there is no involvement of the sphincters.

The knee-jerks are exaggerated. There is no patellar clonus and no ankle-clonus. The plantar reflex is flexor in the right foot. In the left it is not distinctly present.

The pupils are equal and respond to light. There is no diplopia and no nystagmus. The heart and lungs are normal.

The *President* thanked Dr. Monro for his interesting communication, and discussed the relations of such cases to the true muscular dystrophies and to neuritis.

## II.—OPERATION FOR ECTROPION.

BY DR. FREELAND FERGUS.

At a meeting of the Ophthalmological Society of the United Kingdom held in November, 1903, I described an operation for ectropion which I have practised for some time. As I have had since then several opportunities of performing the operation, and as I have procured, through the kindness of Dr. Livingstone, House Surgeon to the Glasgow Eye Infirmary, an excellent photograph illustrative of the good results obtained by the operation, it seemed to me that additional details might be of interest to the members of the Pathological and Clinical Society.

My method is only suitable for those cases of ectropion which are associated with old-standing blepharitis marginalis. When an eye affected with this malady is inspected it is found there is great hypertrophy and swelling of the margin of the lid, but the inner two-thirds of the conjunctiva are perfectly healthy. The diseased portion is clearly delimited from the healthy. As a result of the hypertrophy, the lid becomes everted, and, as the edge of the eyelid is carried outwards, the inferior punctum is no longer in contact with the ocular conjunctiva. The whole condition gives rise to the appearance described by the Scottish phrase, "bleared een."

The principle of the operation is the removal of the diseased tissue throughout its entire extent. For this purpose an incision is made in the inner surface of the eyelid, so as to separate the unhealthy and healthy portions of the conjunctiva. A second incision is made in the margin of the eyelid, so as to separate the healthy skin from the diseased conjunctiva. All the hypertrophied tissue between these two incisions is removed with a pair of scissors. The success of the operation depends upon the thoroughness with which this excision is done. The raw surface thus formed is covered by the healthy conjunctiva, which is freed and drawn up to the edge of the eyelid and stitched in its new position.

The methods of treatment hitherto in vogue have been such means as Snellen's sutures; the excision of a triangular portion of the eyelid at the outer canthus; the application of caustics

to the hypertrophied tissues. Sutures are always uncertain in action. My own conviction is that if they are inserted in a perfectly aseptic condition they will not produce cicatricial bands. Hence in the hands of modern surgeons, trained in the aseptic school, attempts to cure ptosis by Pagenstecher's modification of Dransart's operation are generally failures. If an effort be made to reduce the hypertrophy by the



application of caustic, it takes a period of many months; it is very painful, and very often is not successful.

A part of the treatment hitherto employed has been the slitting of the canaliculus and the passing of probes. Hitherto I have not adopted this as an adjunct to the operation. Of recent years I have again and again removed the lachrymal sac for purulent conditions. The first time that I did it was a



good number of years ago, on which occasion it was undertaken as a preliminary step to an operation for senile cataract in a patient who suffered from chronic blenorrhœa. Since then I have frequently removed the sac, and have never known a patient to complain of epiphora. None of the patients on whom I have performed this operation for ectropion have complained of lachrymation, although in all the lachrymal passages have been left alone.

In the accompanying photograph the patient is shown as he appeared after the left lower eyelid had been operated on. It will be observed that the margin of the left lower eyelid is in excellent position, while on the right side there is great ectropion. The patient was photographed in this condition, so that the two sides might be compared. A subsequent operation put the right lower eyelid in a perfectly satisfactory condition.

The operation was very favourably commented on by *Mr. Maylard* and *Drs. Edington, Rowan, and Inglis Pollock*.

### III.—TESTS FOR BINOCULAR FIXATION.

BY DR. FREELAND FERGUS.

Dr. Fergus demonstrated and criticised the tests for binocular fixation. The various forms of stereoscope were shown and discussed. None of them quite satisfied the requirements of Dr. Fergus in respect of ensuring that the three dimensions were really appreciated. He had found the coloured pictures known as "plastographs" the best tests.

*(The report of this Meeting will be continued in our next issue.)*

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### GLASGOW SOUTHERN MEDICAL SOCIETY.

At the first ordinary meeting, held on 3rd November, 1904, the President, Dr. James Hamilton, gave an address on "The Influence Remedial Agents Exercise in the Treatment of Disease." He adopted a critical attitude, and taking acute pneumonia as an example, referred to the widely divergent methods of treatment—by stimulating expectorants, by cardiac tonics, by sedatives, or by purely expectant methods—under all of which patients get safely through the ordeal.

This naturally raised the general question whether drugs did not, after all, play a much smaller part than was usually supposed; and, further, as to whether, in not a few instances, they were even harmful, probably retarding progress, although affecting favourably for the time being one or other symptom.

He contended that the treatment should be approached more from the point of view of the causation of disease, and showed, by referring to Metchnikoff's researches on phagocytosis, that there was a natural tendency in all diseases towards recovery provided the patient was placed in favourable conditions. These researches simply confirmed the doctrine, held as far back as Hippocrates, that nature after all was the true physician of disease.

He thought this was too frequently forgotten at the present day, and that the large use of drugs, and especially new drugs, clearly pointed to the inference that we had not yet outlived the merely empirical and symptomatic treatment of earlier times, and that we were thus even now largely the slaves of tradition so far as the administration of drugs was concerned.

He thought that, with the exception of the antitoxin treatment, we had made no advance in the therapeutics of disease generally. Experience taught us to discard a large part of the *materia medica*, and with increasing years we used fewer and fewer drugs. The drugs which we knew to have any direct action on disease were very few, and when we mentioned quinine in ague, mercury and iodide of potassium in syphilis, and iron in anæmia, we had pretty well exhausted the list. Beyond these, of course, we had a larger list, which, if they could not be said to cure disease, at least assisted to a more comfortable life. Such were the bromides in epilepsy, opium in diabetes, digitalis and the nitrites in heart affections, coal-tar products in nerve affections, &c.

Dr. Hamilton concluded by urging the most careful study of the natural history of disease, especially in the early stages, and urged that medical men, as the natural custodiers of the public safety, should aim at discovering and eliminating the causes of disease.

The second ordinary meeting of the Society was held on 17th November, 1904, Dr. James Hamilton, President, in the chair.

Dr. T. K. MONRO opened a professional conversation on "Cases that Bonesetters Cure."

*Dr. Hamilton* related a case of spinal caries where a bone-setter "diagnosed and reduced two dislocations," with apparent improvement to the patient. A few months later phthisis supervened.

*Dr. Burges* told of a bonesetter with considerable skill who had successfully reduced a dislocated hip.

*Dr. Duncan* spoke of a hip-joint case where the manipulation gave every satisfaction; but pain returned in a month, and the patient died of general tuberculosis.

*Dr. T. Forrest* alluded to a bonesetter who reduced, with apparent ease, a semilunar cartilage which had baffled two doctors, in spite of the help afforded by chloroform.

*Dr. W. Wallace* said the question was whether the enormous vogue of the bonesetters did not argue some want of skill on the part of the doctors, and suggested that this arose partly from want of opportunity in general practice.

*Drs. Leask, Robertson, and Carstairs Douglas* also took part in the discussion.

*Dr. Monro* emphasised a point brought out by the discussion, namely, the danger of lighting up widespread tuberculosis by interfering with a more or less quiescent lesion.

At a meeting of this Society, held on 1st December, 1904, DR. JOHN ROWAN read a paper on "Some Old Books of Medicine and Surgery." Among others, he showed, and read extracts from, Culpepper's *Last Legacy* (1656); Van Helmont (1662), whose treatment of fever—"Put him down a well and keep him there till he testifieth he is cool enough"—is sufficiently drastic; Frederic Dekkers (1695); and Du Verney (1737), on the "Nature of the Organs of Hearing." Many of the illustrations were reproduced as lantern slides, and greatly increased the interest of the meeting. Dr. Rowan also showed Charles Wesley's book of Treatment, and specially called attention to his advocacy of electricity in no fewer than forty-five diseases.

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## REVIEWS.

*Diseases of the Ear, for Practitioners and Students of Medicine.* By JAMES KERR LOVE, M.D. Bristol: John Wright & Co. 1904.

THE chief objects of this work are to spread a sense of the responsibility of the general practitioner and a knowledge of operative detail on the part of the aural surgeon. For the helping of those whose knowledge of the anatomy of the temporal bone has become hazy, there are appended a series of 54 stereograms. In addition there are two coloured plates, depicting the otoscopic appearances of the parts in health and disease, and there are many figures in the text. The stereograms form an important part of the book. Some of them we are already familiar with in the pages of the *Medical Annual* for 1904, but the majority are new. Some of the specimens so depicted are in the Hunterian Museum of the University, and others are from Professor Cleland's collection; but the bulk are from preparations made by the author. Dr. Love advises the reader to study these plates before beginning to read the text, and we think that the advice is sound. A careful study of the plates will do much to render the reader *au fait* in the anatomy of this part of the skull.

On turning to the text we find introductory chapters on anatomy and physiology, on diagnosis and methods of examination, and on general prognosis and treatment. The diseases of the external ear are then taken up; they comprise eczema, furunculosis, ceruminous collections, &c. A chapter is devoted to the relationship of the naso-pharynx to the ear, and then we come to what is a very important part of the book, viz., diseases of the middle ear. These diseases are carefully gone into, as also are their complications; and the treatment of mastoid disease is lucidly expounded. The signs and treatment of intracranial complications occupy a chapter to themselves. In this chapter the pathology is perhaps thin; the same remark applies to the symptoms. A useful table showing the differential diagnosis of cerebral abscess, meningitis, and sinusitis is found on p. 245. The matter in this chapter is illustrated by clinical reports of cases.

The closing two chapters deal respectively with the diseases of the internal ear and with deaf-mutism. Both are full of

interest; in the latter the author expresses his views on the subject of the education of the deaf. A useful formulary, in the shape of an appendix, precedes the index.

"The work is a record of personal experiences," and as such falls to be read with interest. It is free from padding, and the instruction which it imparts is put forward very clearly. The book is rather inconvenient in shape, but this has been caused by the inclusion of the stereograms; the type is large and clear. The wide experience of the author commands attention to his opinions, and we doubt not the volume will prove a help to many. We offer to Dr. Love our heartiest congratulations on the outcome of what must have been immense labour—a labour which could not have been more fittingly crowned.

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*Notes on the Composition of Scientific Papers.* By T. CLIFFORD ALLBUTT, M.A., M.D., LL.D., D.Sc. London: Macmillan & Co., Limited. 1904.

THE distinguished author of this little volume tells us that each year he peruses sixty or seventy theses for the degree of M.B., and about twenty-five for the degree of M.D. He has no grievance against the matter of these theses, but he finds that the majority of them are composed badly, some of them very badly indeed. And his critical remarks on defects of style, which have been prompted by the examination of these essays, are now collected in this book of more than one hundred and fifty pages.

The first fourth of the book is introductory, and furnishes us with delightful reading. Not the least interesting passages are those in which the writer tells us about his own habits of composition; how for each subject on which he has to write he has a labelled drawer or large envelope, in which he collects the appropriate slips, cuttings, and references; how composition is painful to him; and how he usually makes at least four drafts before the manuscript is sent to the printer. As he advises the reader never to compose when tired, or in the false confidence of tea and late hours, it might be supposed that he is exemplary in these respects; but we gravely suspect that the fine work with which Professor Allbutt has enriched the medical literature of our language is not wholly the work of hours of leisure when artificial light was unnecessary.

The second chapter occupies about three-fourths of the book, and is entitled "On Composition." Different readers will

doubtless form different opinions about it, but to us it is not nearly so interesting as the first part, though some of the illustrations of bad style are undoubtedly amusing. One of the mistakes which the author rightly warns us to avoid is the common grammatical error of forcing an alien preposition upon a verb, as in the expression, "of which he had heard but never seen." By an extraordinary oversight, the writer himself furnishes us (p. 28) with an equally good example of this mistake—"by elements, many of them, indeed, true and proper enough, of which we casually think but do not bring explicitly into view." As with the spelling of words, so with the writing of correct English; education is the main thing, but a certain amount of natural aptitude is necessary. Some well-educated people seem to be quite unable, without the aid of a dictionary, to spell many of the simple words used in writing a letter, and a larger proportion of individuals fail, in spite of much practice, to acquire a tolerable style of composition. Unfortunately, the latter defect is far from being confined to the writers of theses; we wish it were much less common among the medical writers of to-day. To all classes of readers, however, this book may be cordially recommended, since those who do not care to profit from a study of the one section, may at least derive enjoyment from a perusal of the other.

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*The Pocket Companion to the British Pharmacopœia, comparing the Strength of its various Preparations with those of the United States and other Foreign Pharmacopœias, to which are added Not Official Preparations and Practical Hints on Prescribing.* By PETER WYATT SQUIRE. London: J. & A. Churchill. 1904.

THE present volume may be regarded as a result of the great advance that has taken place in recent years in the number of synthetic drugs used in medicine, as well as in the methods now available for preparing and testing pharmaceutical products. Squire's *Companion*, so long and favourably known to those who work with drugs, would have become inconveniently bulky through the addition of new matter, much of which would doubtless have been of little interest or value to a considerable section of its readers. It was, therefore, thought better to publish the new work in the form of two books, the smaller of which should contain the necessary

information on matters connected with prescribing and dispensing; whilst the larger should include the contents of the smaller, together with notes on improved pharmaceutical processes and criticisms of the official tests.

The book before us is the smaller of these two works. The arrangement is alphabetical, as in the case of the older work. After the dose of each substance, a list of the official and not official preparations is given, so that the prescriber can readily inform himself as to the various modes in which a medicine may be administered. The subject of medicinal properties has been brought up to date, and references are given to recent literature. The prescribing notes have been enlarged, and in great part rewritten, and the doses are given in both the imperial and the metric system. Professor R. T. Hewlett contributes a chapter on therapeutic agents of microbial origin, including antitoxic sera, tuberculin preparations, vaccines, &c. There are also lists of British and foreign spas, a classification of mineral waters, classifications of remedies according to their therapeutic action, and according to the ailments for which they are employed, and, finally, a general index.

The *Pocket Companion* should enjoy the confidence of prescribers and dispensers, as its predecessor has done. It is conveniently arranged, and contains an enormous amount of important information. We wish it all the success it deserves.

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*Encyclopædia Medica.* Under the general editorship of CHALMERS WATSON, M.B., F.R.C.P.E. Vol. XII, Syphilis to Typhus Fever; Vol. XIII, Ulceration to Zinc Poisoning; Vol. XIV, Index. Edinburgh: William Green & Sons. 1902-1904.

THE concluding volumes of this *Encyclopædia* contain a number of valuable and interesting articles. Syphilis is the first subject treated of in Volume XII, and Mr. D'Arcy Power's article on the subject may be commended to the reader. Tabes could scarcely have been allocated to a better recognised authority than Dr. Mott. This writer points out the close kinship which the disease bears to general paralysis, and the importance of syphilis in the etiology of both affections. On the whole, perhaps, he tends to exaggerate the gloominess of the prognosis. Mr. G. W. Watson contributes an elaborate article on the Teeth. Dr. J. W. Ballantyne writes on Teratology.

The subject of Therapeutics is discussed by three authors from three points of view. Mr. Ernest Flodin gives us a long article on Physical Therapeutics; while Drs. Murrell and Hobhouse write on Serum Therapy and Health-resorts respectively. The Thyroid Gland is considered from the medical point of view by Dr. G. R. Murray, and from the surgical point of view by Mr. Frederick Page. Mr. Dundas Grant writes on Tinnitus Aurium, while the contribution on Toxicology is from the pen of Dr. Dixon Mann. Dangerous Trades have found a capable exponent in Dr. Thomas Oliver, who is perhaps the greatest living authority on the subject. The important subject of Tuberculosis has been undertaken by Dr. Theodore Shennan; while Tumours are considered by Mr. Bland-Sutton, Dr. G. T. Beatson, and Mr. George Pernet.

Volume XIII is also an important one. Dr. Tirard writes on Uræmia. Mr. D'Arcy Power gives us a valuable article on the Urethra. Dr. Milroy writes on Uric Acid. The Urine is considered by Dr. A. E. Garrod, and from the bacteriological point of view by Dr. J. H. Drysdale. The Uterus is dealt with by six writers, of whom Dr. Giles writes on Developmental errors, Dr. Brewis on Displacements, Dr. Fordyce on Inflammation, Mrs. Scharlieb and Mr. Bland-Sutton on Tumours, and Dr. Lewis Bruce on Associated Insanity. Mrs. Garrett Anderson contributes an admirable vindication of Vaccination. Dr. J. W. Allan writes on Varicella, and calls attention to the serious annoyance and even danger which may be occasioned by a disease which is generally recognised as a trifling matter. Dr. Leslie Mackenzie's article on Ventilation and Warming is well worthy of attention. Mr. Jordan Lloyd contributes an elaborate article on the Vesiculæ Seminales. Anything from the pen of Dr. Mackenzie of Burnley deserves attention, but more than one statement in his article on Visceral Pain may be questioned. For instance, he not only rejects the generally accepted view that the sympathetic system is an outgrowth from the cerebro-spinal, but he asserts that the evidence in favour of the latter view is based entirely on the histological examination of the embryo. In our opinion, this is simply ignoring the epoch-making investigations of Gaskell. Among the other articles which may be mentioned are those by Dr. Newsholme on Vital Statistics, Mr. Treacher Collins on the Vitreous, Dr. Thresh on Water, Dr. James Carmichael on Whooping-cough, Mr. Shaw M'Laren and Dr. E. H. Bennett on Diseases and Injuries of the Wrist-joint, Dr. Dawson Turner on X-rays, Dr. Andrew Davidson on Yellow Fever, and Dr. T. S. Low on Plague.



Volume XLV, consisting of 282 pages, is devoted to an Index for the whole *Encyclopædia*, and constitutes a fitting conclusion to the work. The editor and publishers deserve our hearty congratulations on the successful termination of a great enterprise, and the happy possessors of the *Encyclopædia* may also be congratulated on the wealth of medical knowledge which they have at their disposal in those fourteen large volumes.

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*Insanity in Every-Day Practice.* By E. G. YOUNGER, M.D., M.R.C.P., D.P.H. Medical Monograph Series, No. 8. London: Baillière, Tindall & Cox. 1904.

THE aim of this monograph is to give within narrow compass a broad-outline-view of insanity, a small book, to which the general practitioner, when in a difficulty, may turn with a reasonable hope of finding the help he wants. The symptoms of the different types of insanity are sufficiently described, and prognosis is also considered. A section is devoted to the legal bearings of lunacy. Since most cases of mental disease pass out of the hands of the general practitioner, treatment is barely alluded to. The book is everything it pretends to be, and will, we feel sure, be prized by the class it is written for.

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*The Therapeutics of Mineral Springs and Climates.* By I. BURNEY YEO, M.D., F.R.C.P. London: Cassell & Co., Limited. 1904.

DR. YEO's earlier works on *Medical Treatment* and on *Food in Health and Disease* prepare us to find in this new manual a well-written and highly informing treatise. The author explains that it is founded on an earlier work, which has long been out of print, but is now presented to us again in a more elaborate and systematic form. The book consists of two parts, of which the first deals with mineral springs, and the second with climate and climatic resorts. The first three chapters are devoted to the nature, composition, and classification of mineral springs, the modes of application and action of mineral waters, and the accessory measures employed in connection with mineral water cures. After this we have a description of the principal mineral springs, which are very conveniently arranged in alphabetical order; and this is

followed by a section on the application of mineral waters and baths to the alleviation and cure of disease.

The second part consists of ten chapters, in which the subject of climate is discussed in various aspects. The third and fourth chapters treat of the seaside resorts of Britain and the Continent. In the fifth and sixth chapters, the subject of mountain health resorts is considered. Then we have chapters on winter quarters on the Western Riviera, and on sea voyages and distant climatic resorts. The concluding chapter deals with the application and selection of climates, and with the subject of sanatoria. There is an index for each of the two parts of the work.

The subject of this treatise is, of course, a familiar one, and more than one good work of the kind has appeared in recent times. But to those who are not already equipped in this way, we can thoroughly recommend Dr. Yeo's new book as a good guide to the subject of mineral waters and climatic resorts.

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*An Atlas of Human Anatomy, for Students and Physicians.*

By CARL TOLDT, M.D. Translated by M. EDEN PAUL.  
Section IV: Splanchnology. London: Rebman, Limited.  
1904.

IN this section there are 291 figures, and, as before, these bristle with names. In some of the illustrations of the abdominal organs greater contrasts of shading would be a help in picking out the various points intended to be displayed. There is a slip in Figs. 916 and 917—"left" should read "right." The volume closes with a supplement consisting of notes by the translator, with references to authorities as regards differences both in nomenclature and description.

This section fully sustains the character of the work as shown in the previous volumes.

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*Manual of Surgery.* By ALEXIS THOMSON, M.D., and ALEX. MILES, M.D. Vol. II: Regional Surgery. Illustrated with 156 Wood Engravings. Edinburgh and London: Young J. Pentland. 1904.

THE second volume of this manual deals with the surgical affections of the following regions of the body, viz.:—Head

and neck, thorax, abdomen, and genito-urinary organs. As a closing chapter, there is a short account of the various anæsthetics, with hints on their choice and use.

We must confess to difficulty in following the description of Chiene's method of mapping out the topography of the contents of the cranium. In comparing text and Figures 2 and 3, "the posterior half of the line Mo is bisected in T" does not tally with the figures. Surely GO is meant. At the close of the description angular measurement is made use of, although this method is selected as giving results not depending on the determination of particular angles.

The pupils in alcoholic coma might have been described more fully (p. 23), as also the precautions as to cleansing face wounds (p. 121). In the latter, no mention is made of paring the edges of the wounds to avoid tattooing.

The treatment of appendicitis is fair, and perhaps safe. Some surgeons would consider the waiting period rather too long.

The treatment of stricture of the urethra is well put. The details, however, of internal urethrotomy are not given.

As a manual for students, the volume forms a fitting companion to the one which has already appeared, and we congratulate the authors on the completion of a most useful work.

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*The Clinical Causes of Cancer of the Breast and its Prevention.*

By CECIL H. LEAF, M.B. London: Archibald Constable & Co. 1904.

THE author propounds, in the introductory portion of the book, the view that not one but *many* clinical causes of cancer exist. He has investigated 100 cases of cancer of the breast with the aim of determining the value, relative, if any, of the several circumstances which are held to be of etiological importance. He has confined himself to the region of the breast, and he believes that each region, subject as it is to various influences, must be studied separately so as to determine scientifically the etiology of the disease.

In summing up (p. 56), he finds that "the four factors most constantly present are—(a) errors of lactation; (b) family history of consumption; (c) injury; (d) worry and anxiety. We must therefore regard these as the four most common causes of cancer of the breast."

The concluding chapter—on prevention—advises avoidance

of damp in those predisposed to consumption; avoidance of marriage by those whose health, or in whom the nipples are likely to prevent normal suckling being carried on; careful management of lactation; avoidance of injury or strain; and the wearing of proper corsets.

Such, in brief, are the author's conclusions and recommendations. The latter seem to us to be sound in theory, but we question if they will be acted on by those for whom they are meant. Whether or not the conclusions will tally with those, equally carefully come to, of other observers, time will show. If confirmatory evidence from reliable sources is forthcoming, then the author should feel that his work has not been in vain.

*Text-Book of Legal Medicine and Toxicology.* Edited by  
FREDERICK PETERSON, M.D., and WALTER S. HAINES, M.D.  
Vol. II. London: W. B. Saunders & Co. 1904.

THE second and concluding volume of this work continues the same high level as its predecessor. The twenty-four contributors are selected from a wide range of colleges and other seats of learning over the whole United States, with the happiest results.

In Part I of this volume the following subjects are dealt with:—"Malingering and the feigned disorders," "The legal aspects of pregnancy," "Legitimacy: the determination of sex—signs of delivery," "Birth and legitimacy," "Abortion," "Infanticide," "Impotence and sterility," "Rape," "Unnatural sexual offences," "Venereal and genito-urinary diseases in their medico-legal relations," "Marriage and divorce," "Malpractice," "The medico-legal relations of the Roentgen or x-rays," "Laws relating to the insane."

Part II deals chiefly with toxicology, and is arranged as follows:—"General principles of toxicology," "Inorganic poisons," "Alkaloidal poisons," "Non-alkaloidal organic poisons," "Gaseous poisons," "Food poisoning," "Ptomaines and other bacterial products in their relation to toxicology," "Post-mortem imbibition of poisons," "Medico-legal examination of blood and blood-stains," "Medico-legal examination of seminal stains," "Medico-legal examination of hairs," "Death from pounded glass and other mechanical irritants," "The responsibilities of pharmacists and their agents."

All the above subjects, with one exception, are dealt with in a manner at once exhaustive and free from redundancy. The illustrations in this volume, however, are comparatively

few—rather an unusual occurrence in an American text-book. The inserted plates, mostly taken from Hofman's *Atlas*, are, of course, unexceptionable; but those in the text are not only very few in number, but are in many instances poor in quality.

The section dealing with the medico-legal relations of the Roentgen rays is of much interest, and its importance is emphasised by a recent case occurring in Ireland for damages following the use of these rays.

The section dealing with the laws relating to the insane gives a *résumé* of the statutes of all the States, each State having its own laws on the subject.

In the toxicological section, while nothing of importance has been omitted, there is nothing which calls for detailed criticism.

In the medico-legal examination of seminal stains the Florence test is given undue importance.

The whole section dealing with the medico-legal examination of hairs consists of less than three pages, and of necessity treats the subject in a most inadequate manner.

As in the first volume, many illustrative cases are quoted, and the references given.

The work now completed takes its place in the very first rank of text-books dealing with the subjects of medical jurisprudence and toxicology.

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*Diseases of the Gall-Bladder and Bile-Ducts.* By A. W. MAYO ROBSON, F.R.C.S., assisted by J. F. DOBSON, F.R.C.S. Third Edition. London: Baillière, Tindall & Cox. 1904.

THIS well-known work reappears with considerable additions and alterations. The former are in the shape of new chapters on anatomy and physiology, and the latter are the result of the modifying, by experience, of the author's previous opinions. The diminution in the mortality after the various operations speaks for the improvement which has taken place in this department of surgery under the author's hands.

There is an appendix of cases—539 as compared with the 305 of the previous edition. This appendix takes the place of the tables which formerly appeared, and which we venture to think were more convenient for reference, on account of the grouping of the cases which they necessarily entailed.

The volume is a great advance on the previous edition, and we can heartily recommend it to the perusal of both physicians and surgeons.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

## M E D I C I N E.

By JOHN G. GRAY, M.D., F.F.P.S.G.

**Jacksonian Epilepsy associated with Secondary Carcinoma of the Brain and Meninges, the Skeleton also being involved in the Metastasis.** By Chr. Leegard and Francis Harbitz, in the *Norsk. Magaz. f. Lægevid.*, June, 1904 (Max Solomon, *Deutsche Medizin. Zeitung*, 3rd November, 1904).—The patient, a married woman, aged 53, was operated upon in November, 1902, for carcinoma of the left breast. The breast was completely removed, together with the lymphatic glands in the corresponding axilla. Previous to this, viz., in August of the same year, she began to have convulsive seizures. They recurred at intervals, and persisted till the patient's death on 22nd September, 1903. At one time they would consist of slight twitching of the muscles of the right foot or left leg, at another they would extend to the right half of the abdomen or chest, or even to the right arm or right side of the face. Each attack would last about an hour; it was followed by pain and by muscular weakness which lasted for a short time, and to a certain extent also by loss of sensation. The patient retained consciousness unless when the left half of the face or the left arm was affected. There was some bulging of the left parietal bone, and a tender spot was found on its anterior border from 2 to 2½ cm. from the middle line. There was tenderness over the vertebræ throughout the whole column, over the left tibia, and over several ribs.

The clinical diagnosis was metastatic carcinomatous infiltration of the cerebral meninges, particularly in the upper part of the left hemisphere. Symptoms were also present which pointed specially to involvement of the central convolutions and to the paracentral lobe. Hyperæsthesia over certain bones was likewise interpreted as indicating involvement of parts of the skeleton in the metastasis.

At the autopsy, a small carcinomatous tumour of the skin was found near the site occupied by the original tumour. Nodules of a carcinomatous nature were found in the lymphatic glands of the post-mediastinum and left supra-clavicular fossa, in the pleuræ, in the liver, and in the mucous membrane of the mouth. The periosteum was in many places markedly infiltrated with tumours, some of which were from 2 to 3 mm. in thickness, as, for example, over the area corresponding to the posterior part of the parietal bones. They were found on the sternum, on one of the ribs, and throughout the whole length of the vertebral column. The dura mater was densely infiltrated with tumours on its outer surface, principally under the left parietal bone and along the middle meningeal artery and its branches. The dura mater was adherent to the pia mater by means of flattened nodules, for the most part in the area corresponding to the lower part of the left posterior central gyrus and the apex of the left temporal lobe. The falx cerebri was thickened and infiltrated, and adherent to the pia mater. In the centre of the left hemisphere there was a tumour-infiltration which had undergone softening; it extended to a depth of 7.5 cm. through the superior frontal gyrus and part of the median frontal gyrus, and through the anterior central gyrus to the central sulcus. The spinal dura mater was also studded with nodules, principally in its lower part, in the lower dorsal region. It was especially thickened and infiltrated round the inter-vertebral spaces. The microscopic examination showed the structure of the

tumour to be typically carcinomatous, with small polymorphous cells enclosed in alveoli. In the meninges, the blood-vessels, and in particular the veins, were completely occluded over a considerable area. The author draws attention to the frequency with which the metastatic process in carcinoma reaches the dura mater and pia mater by way of the blood-vessels when the clinical picture presented may be that of meningitis.

**The Differential Diagnosis and Treatment of the So-called Rheumatoid Diseases.** By Dr. Joel Goldthwait (*Boston Medical and Surgical Journal*, 17th November, 1904).—The paper is based on twelve years' work at the Orthopaedic Department of the Carney Hospital, Boston, and was read at the annual meeting of the Suffolk District Medical Society on 30th April, 1904.

Several forms or types—in all, five—are distinguished. More than one type may be present in the same case.

1. *The chronic, villous arthritis or "dry joint."*—It represents a strictly local process with no tendency to progression. The chief characteristics are creaking of the joint, and varying degrees of pain and tenderness on movement. The knee-joint is the one most commonly affected. As a result of continued irritation, the membranes are thrown into folds; the latter become more swollen, forming fringes or villous processes. Catching in the joint or complete locking sometimes occurs. The amount of fluid present is rarely less than normal; there may be an excess when there is much irritation. Degenerative changes, such as fatty degeneration of the villi, may take place when this condition has existed for a considerable length of time; or calcareous degeneration may occur or small bony or cartilaginous masses may be found in the folds of the membrane, quite removed from the normal articular cartilage.

The treatment consists in improving the tone of all the structures concerned in the action of the joint. Any defect, such as flat-foot, is to be remedied, or any source of weakness or strain is to be removed.

2. *The atrophic arthritis or rheumatoid arthritis.*—This is a progressive disease resulting in marked distortion, the essential pathological feature being atrophy of the various structures of which the joint is composed. At the outset, the affected joint becomes swollen owing to an increase in the amount of the synovial fluid and to infiltration of the membranes and periarticular structures. Signs of atrophy then make their appearance in the shape of partial absorption of the cartilage between the bones, as may be demonstrated by means of the x-rays. The atrophic changes gradually become more marked, and may result in dislocation or other deformities. The disease progresses slowly, and may extend over many years. Several joints may be attacked at once, or the disease may begin in one joint and then extend to others. The finger-joints are almost always affected early. As the disease progresses, any or all of the joints may be affected. The jaw is frequently involved, rendering mastication difficult and painful, and interfering with the nutrition.

The etiology is obscure, some of the features suggest trophic changes, but as yet there are no pathological data to go upon. Examination of the blood shows little abnormal. There may be slight anæmia. The lymphatic glands are not enlarged.

The treatment consists in improving the general health by means of fresh air, tonics, and such measures as are calculated to improve the general tone. The drinking of considerable quantities of water or of some mild alkali is recommended to secure free elimination of waste products, and small doses of the salicylates, such as 5 grains twice daily. Locally, the treatment should be in the main stimulating, special measures, however, being adopted according to the particular condition present.

In a considerable number of cases, the disease can be arrested, while in many its course may be greatly modified.

3. *The hypertrophic arthritis or osteoarthritis.*—It may be either a local or a general process. It is characterised by a thickening at the edges of the articular cartilages, or at the attachments of the ligaments, forming ridges or

nodes which become ossified. As the disease progresses, the ends of the bones forming the articulation become sclerosed and much denser than normal, the essential feature being hypertrophy of the cartilage and bone. When it affects the spine, the process usually starts in the cartilage and follows the anterior lateral ligament on one side more than the other; the vertebræ may thus become fused together. The thickening usually extends round to the lateral aspect, and not infrequently the nerve roots are pressed upon. Persistent sciatica, intercostal or brachial neuralgia, are frequently to be explained in this way. Also the costo-vertebral articulations are often involved.

The etiology is not known. Cold, exposure, strains, or other injuries are to be regarded as important factors in bringing about this condition.

The treatment consists in keeping the part at rest during the acute or painful stage. After the acute process has subsided, the removal of the thickened nodes is desirable.

4. *The infective form.*—This is by far the most common type. The symptoms are due to the presence of an organism in the joint, or to some toxin produced by the organism. One joint alone may be affected; in this case the disease may be very slight or it may go on to considerable destruction of tissue. The onset is usually abrupt; at times, symptoms of great acuteness may manifest themselves within a few hours; at other times, it is more insidious and more gradual. When several joints are affected this occurs simultaneously, there being very little tendency to progression in this respect. The symptoms point to a systemic disturbance. There is a high temperature, a rapid pulse, and the lymphatic glands and spleen are enlarged. When it is due to the typhoid bacillus, the process in the joint may simply consist of a toxæmia with a serous exudate, resulting in recovery in a short time with no impairment of function. On the other hand, when the organism is present in pure culture in the joint, severe destructive changes may be set up resulting in deformity. What is true of the typhoid bacillus is true of the other pus-producing organisms—the pneumococcus, streptococcus, gonococcus, influenza bacillus, and the bacillus of dysentery. The gonococcus rarely gives rise to destructive changes involving the bones. The symptoms which suggest “rheumatism” in tubercular disease are probably due to toxins derived from some other organisms, which are almost always present along with the tubercular bacillus. When new formation of bone takes place, it does so as a septic osteitis or periostitis. The blood, at the commencement and during the acute stage, shows an increase in the leucocytes with, usually, a high percentage of hæmoglobin. As the acute symptoms subside the number of leucocytes diminishes, and the percentage of hæmoglobin becomes less.

The treatment is constitutional and local. In the early stages, salicylic acid and its compounds will often be useful in relieving pain. The depressing influence of salicylic acid on the heart is to be borne in mind, and some of the simple alkalies substituted after a few days. As regards the local treatment during the acute stage, little can be done beyond fixing the joint and adopting such measures as will relieve the discomfort as much as possible. In some cases, especially those due to the presence of the pneumococcus or streptococcus, the symptoms may develop rapidly and actively, and indicate that the joint must be opened and thoroughly drained.

5. *Chronic gout.*—This form is much less common than the others. In designating it, only a descriptive term is used on account of the imperfect state of our knowledge regarding its pathology. Its essential characteristics, so far as the disease has been studied are, chiefly, deposits of urate of soda in the soft structures about the joints, with absorption of bone adjacent to the deposits. It is a slowly progressive disease with periods of exacerbation, and is quite different from the condition known as acute gout, in which the great toe is the part most usually affected. After the deposits have attained a considerable size, they become soft; openings may form, and the urate of soda may discharge in a creamy state, much as the pus from a tubercular sinus does. The changes in the bone are local, but large portions of a particular bone may be affected as, *e.g.*, in the fingers or toes a whole phalanx may be



destroyed. These changes may begin at the articular surface of the bone or in the shaft, and in the former case, when it is observed first the lesion is well defined and has a punched-out appearance. Recovery sometimes takes place, although it is never complete. There is, however, less impairment of function than one would imagine.

The treatment consists in rest in bed during the acute part of the attack, and warmth locally. The application of rubber tissue or flannel to produce sweating is said to be beneficial. Forced feeding is recommended after the attack is over, and the drinking of large quantities of water to increase the flow of urine, which is always scanty. Meat and nitrogenous foods may be allowed if the eliminative functions are active.

Colchicum or the salicylates seem to be of most value in cutting short the attack. Tonics are afterwards indicated.

## SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

**The Pathogenesis of Chronic Gastric Ulcer.**—To *American Medicine* for 10th September, 1904, W. G. MacCallum, M.D., Baltimore, contributes a survey of the chief experimental work and theoretical contributions dealing with the pathogenesis of chronic gastric ulcer within the last fifty years. On account of the admirable manner in which it gathers up the threads of a much debated controversy, it is deemed worthy of a somewhat lengthy abstract.

The survey begins with a reference to the opinion expressed by Virchow in 1855, that the condition is essentially due to circulatory disturbances—embolism, thrombosis, arterio-sclerosis, aneurysm-formation—of the stomach-wall. Panum, Pavy, Müller, Roth, Körte, Cohnheim, and others, followed Virchow in this view, and much experimental work was done on these lines, by ligating the larger vascular trunks supplying the stomach-wall, by injecting both larger and minuter arterial branches with finely divided substances, such as lead chromate, globules of wax, ultramarine blue, &c. The general result of these experiments, however, seems to have been, that occlusion of single large trunks was usually readily compensated for by neighbouring branches taking on a special activity, while, in the case of the most minute vessels, localised areas of mucosa might necrose, and actual ulcers result. In any case, however, unless the extent of necrosis was very great, the infarction seemed to tend to contract, and ulcers exhibited every readiness to heal. Further, vascular obstruction seems to be but rarely found in connection with human gastric ulcers. Many of these occur in young people who have no obvious vascular disease, and embolism of the gastric vessels is of rare occurrence (Fenwick). The aneurysmal dilatation of the artery so often found exposed in the base of an ulcer, is more likely to be due to the erosion than the primary cause of the ulcer.

The views of Hauser, Openchowski, and v. Recklinghausen, and others, are next referred to. Hauser regarded the ulcer as on the same lines as a varicose ulcer of the leg, retarded circulation and passive congestion delaying healing. Openchowski and v. Recklinghausen described hyaline degenerations of walls and thrombi in the arteries of the ulcer area. These observations, however, seem to have been borne out by very few other workers.

Müller caused the development of ulcers by tying the portal vein, thus setting up a chronic venous congestion. Axel Key suggested that this congestion might be caused by spasm of muscle.

Talma and his pupil, Van Yzeren, did much experimental work on the subject. The former produced hæmorrhagic erosions by stimulating the

vagi, and explained these as due to auto-digestion, by the stomach juices, of portions of the wall rendered anæmic by the violent muscular contraction thus produced. His pupil produced typical deep ulcers by mere section of the vagus below the diaphragm, and explained their formation on lines similar to the views of Talma, assuming, for his argument, the uncontrolled action of a lower motor neuron after its separation by section from the upper centre, the ganglionic elements of the stomach-wall itself being regarded as the lower neuron. Talma and Van Yzeren suggested the occurrence of some such spasm of muscle as the forerunner of human gastric ulcer.

The experiments of Schiff, Ebstein, Ewald, and Koch, were concerned with the production of hæmorrhages, and consequent erosions in the stomach-wall, as the result of injuries inflicted upon different portions of the central nervous system. The production of ulcers by experimental, mechanical, chemical, and other physical influences exerted locally upon the stomach, has also been worked out very fully by Ebstein, Leube, Hoffmann, Ritter, Körte, &c.

Rasmussen traced the occurrence of many chronic ulcers of the stomach to the pressure exerted directly upon the organ by tight-lacing. Körte described a case in which a gastric ulcer was in close contact with, and pressed upon by, an angular gall-stone in the gall-bladder.

Leube and Decker demonstrated the production of ulcers by burning of the mucosa with hot food, and Roth and others produced ulceration by means of various irritant substances introduced into the stomach.

In all these cases, however, healing occurred readily enough, once the deleterious influence was removed. MacCallum remarks upon the notable power of healing exhibited in connection with lesions of the stomach produced by any of these artificial means, and points out how much more difficult of explanation is the persistence, and tendency to become chronic, of the characteristic round ulcer. Many efforts have been made to produce more permanent ulceration, but little success has been achieved in these attempts. Thus, Quincke and Dactwyler, having produced artificially erosions in the stomachs of dogs, bled the animals freely, and found—as was only to be expected—that the erosions healed much more slowly. Their work was based on the clinical fact that ulcer of the stomach occurs frequently in anæmic persons, especially in chlorotic girls. "Silbermann produced erosions after the method of Cohnheim (by injections of the finer arterioles with lead chromate), after having first rendered his dogs hæmoglobinæmic by chenic means, or by introducing laked blood. He found that he could thus produce deep perforating ulcers, and thought it possible that in this way he was imitating the conditions seen in extensive skin burns, after which gastric and other ulcers are sometimes seen."

The experimental work of Pavy, Samuelsohn, and Matthes is next referred to, as introducing the further element of hyperacidity as a possible factor in determining the persistence, if not, indeed, the appearance of gastric ulcers. Matthes found that by daily irrigation, with 0.56 per cent hydrochloric acid, of the stomach of a dog in which some ulcer had previously been artificially induced, healing could be readily retarded, and he therefore attached paramount importance to the hyperacid condition.

Bacterial infection, as a possible cause of gastric ulcers and of their chronic course, has been suggested by several observers and controverted by others, Böttcher being one of the earliest to suggest its importance, Nauwerck reviving the theory more recently. Körte, however, was unable to find any sufficient evidence of its importance as a pathogenic cause.

MacCallum concludes from all this that "any focus of necrosis of tissue in the stomach may lead, by the action of the gastric juice, to the formation of an ulcer; and although we have not reached a very satisfactory explanation of why such an ulcer persists, writers are unanimous in speaking of it as a peptic ulcer."

From this, he goes on to consider the "old but ever new problem as to why the stomach does not digest itself," and cites the following facts as related more or less closely to the study of gastric ulcer.

Pavy believed the stomach was kept from auto-digestion by means of the alkaline blood in its walls keeping the gastric juice neutralised; yet, the intestine, though bathed in a much more active digestive ferment, in an alkaline medium, does not digest itself. Harley thought the mucus secreted protected the mucous lining, while Claude Bernard maintained that the epithelium, though protective, was itself constantly destroyed and reproduced. His experimental refutation of John Hunter's theory that "living tissue could not be digested on account of the mystic living principle" is referred to. A living frog's leg, introduced into the stomach of a dog, he found, *was* acted on by the gastric juices.

Matthes, however, opposed Bernard's views, and showed that the muscular wall, exposed by erosion and removal of the mucosa, was not digested, and experimentally he found that frogs could be kept in digestive solutions unharmed and unchanged—except for cleaning away of dead epidermis, so long as the acid in the solutions was not strong enough to kill the superficial cells.

Matthes concluded that "enzymes alone cannot attack living tissue, but if associated with acids strong enough to kill the tissue, they then finish the process and dissolve the dead tissue." Hyperacidity, though not able to cause death of tissue, might readily enough prevent new formation of tissue, and so retard the healing of an ulcer already present.

The later work of Weinland on intestinal parasites is then discussed, as bringing forward a new conception. By adding an emulsion of the pulverised bodies of certain intestinal parasites to digestive solutions in which fibrin was placed, he found that digestion of the latter could be retarded. The pulverised gastric mucosa similarly treated, after removal of the pepsin from it, gave like results. Weinland holds, therefore, that intestinal parasites produce an anti-ferment which protects them from the digestive juices, this anti-ferment being only with difficulty separable from the cells. Thus, anti-pepsin is very intimately associated with the cells of the gastric mucosa, and is much less easily extracted than is pepsin itself. "In hyperacid media—up to 2 per cent—its activity decreases or is destroyed." Similar anti-ferments can be demonstrated for other tissues, but less clearly.

Weinland suggests, therefore, that gastric ulcer is "the result of a loss of power to produce anti-pepsin, and consequent destruction of epithelium," or "due to the annulment of the anti-pepsin by the hyperacid gastric juice."

MacCallum discusses this theory and raises several pertinent objections to it. He is inclined, however, to attach some sort of weight to its root meaning, and asks whether it is not possible that *all* the tissues are thus provided with an anti-ferment, that this is specific for the individual, or at least the species, against the digestive ferments of the same species.

"This might offer an explanation of the digestion of the frog's legs or the rabbit's ear, when introduced into the dog's stomach, while the tissues of the dog itself, laid bare to those digestive juices, are unaffected."

Even the important and interesting facts brought forth by Weinland, MacCallum holds, do not explain at once the mode of production of the gastric ulcer.

In recapitulation, he says—"Gastric ulcers may be produced by anything which causes necrosis of the mucosa, and thus subjects it to the digestive action of the gastric juice. While certain cases may be explained in their origin by one or other of the causes given, there are others whose inception is obscure. The persistence of some of these ulcers offers the greatest difficulty of explanation, and none of the theories is satisfactory. Perhaps the majority of gastric ulcers do heal, however, and are recognisable later only by the scars they leave, so that possibly Talma is right in saying that all ulcers tend to heal, but that frequently they last a long time, because new ulceration occurs in the same spot."

**Preventive Orthopedics.**—*The American Journal of Orthopedic Surgery* for August, 1904, contains a valuable collection of papers read by

various American and European orthopedic surgeons at the Eighteenth Annual Meeting of the American Orthopedic Association at Atlantic City, N.J., 8th to 10th June, 1904.

The President, Reginald H. Sayre, M.D., New York, directed the attention of the Association particularly towards the important question of preventive orthopedics, recalling to the members the definition of their art which Andry gave as far back as 1741. Andry defined orthopedics as the "art of preventing and correcting deformities in children." Sayre emphasised the necessity for the surgeon, and particularly the orthopedic surgeon, directing not only his own attention but that of the general practitioner and of the public, to the responsibilities placed on them regarding prevention of deformities, just as much as concerning prevention of disease of any grave nature. It is not enough to acquire expertness in correcting rachitic deformities; not a few of these are compensatory, not a few are the result of unconscious effort to relieve strain. It is necessary to secure proper nutrition, with its improved bone-growth, rather than, by mere mechanical means, to alter faulty position. The orthopedist must instruct the neurologist to guard against post-paralytic deformities, and see that appropriate treatment is begun before unopposed and irregular muscular action has given rise to bone-distortion of an irremediable character. Not only should habits in children be recognised early and corrected, but the underlying causes of these should be investigated and treated. The orthopedist must instruct the public, and the shoemaker, how to construct shoes that will be in accordance with healthy principles, and "this principle, to be of use, must be carried out in constructing the foot-gear of the infant as well as the adult."

He must see to it that school-desks are of proper height, shape, and comfort, that they are allotted in accordance with the size of the children, and not with their mental development. Above all things, he must see to the thorough carrying out of the principles of physical and physiological hygiene, not only in elementary, but in secondary, technical, and advanced schools and colleges.

The study of orthopedic surgery has developed much of late years. Thus, in America, there are over twenty-five colleges in which it forms a special branch of study. The number of graduates receiving sound orthopedic instruction is thus rapidly increasing; but, "I feel," says Sayre, "that we should not limit our efforts to instructing the under-graduates—we should try to instil into the mind of every physician the importance of the statements which I have just uttered."

"At the International Medical Congress, held in Madrid last year, I even heard an orthopedic surgeon advocate doing nothing with infantile club-foot during the first six months, as it might happen to get well by itself. Can we expect intelligence from others, when those who devote themselves especially to the study of deformities, give expression to such unwarranted statements?"

Many of the real causes of deformity are not yet clearly known, and many diverse opinions are held about some conditions, as, for example, lateral spinal curvature. Probably no one opinion holds all the truth. It is necessary, therefore, for us "to untangle the skein and follow its windings to the starting-point, and having found out the truth, to impress ourselves with so much force on the profession, that there shall be no further excuse for ignorance in orthopedic matters, and early diagnosis shall be as common as it is now infrequent."

Further, so commonly is it the case that the man who makes the diagnosis is incapable of directing the treatment, that there has arisen a division between the educated orthopedic surgeon and the real mechanic or orthopedist. The orthopedic surgeon, according to Sayre, ought to be able to apply and adapt mechanical principles to the cure of deformities, "and until he can both discern the cause and apply the remedy, dietetic, instrumental, and surgical, he is not fully equipped for his work, and deserves to fail of recognition at the hands of his confrères."

In a succeeding number, a short reference will be made to some of the most important papers presented to the Association, and included in this *Journal*, which opens with the presidential address by Sayre, abstracted above.

They comprise contributions on neuroplasty, nerve anastomosis, tendon transplantation, Bier's "congestive" method, fracture of the femoral neck, congenital club-foot, &c., by Spitzzy, Young, Albert Hoffa, Freiberg, Whitman, Moore, Judson, and others.

They are of high value, and make the number of the *Journal* which contains them of exceptional interest.

**Lymphatic Gland Infection in Malignant Disease of the Tongue.**—C. B. Lockwood, F.R.C.S., in *The Clinical Journal* (1904, vol. xxiv) describes the following five routes of lymphatic infection in tongue cancer :—

1. Lymphatics passing from tip and frænum drain into a submental gland.
2. A gland lies on the hyoglossus muscle close to the mylohyoid. This can be felt, if enlarged, by combined intra- and extra-oral palpation of the sub-maxillary triangle.
3. One lymphatic trunk passes from the tongue downwards over the hyoid bone and thyroid cartilage, and loops across to empty into a gland lying on the carotid-sheath, at the point where the omohyoid muscle crosses the latter.
4. Several glands lie on the deep aspect of the sub-maxillary salivary gland.
5. Glands along the carotid sheath.

These various groups are infected in a manner as yet not fully explained, and in some cases in an apparently erratic fashion. An epithelioma of one side of the tongue may cause gland infection on the other side of the neck. This may be due (a) to certain lymphatic vessels which cross the tongue near the dorsum; or (b) to the free communication between the lymphatics of the two sides of the neck, which exists behind the pharynx and gullet.—(A. J. Rodocanachi, *The Medical Chronicle*, September, 1904.)

## DISEASES OF CHILDREN.

By R. BARCLAY NESS, M.A., M.B., F.F.P.S.G.

**Seven Cases of Infantile Scurvy.** By Dr. J. Comby, Paris.—Dr. Comby, in *Archives de Médecine des Enfants*, October, 1904, gives a detailed account of seven cases of infantile scurvy (Barlow's disease), five of whom were boys and two girls, aged from  $7\frac{1}{2}$  to 19 months.

All the children had been fed with some form of artificially-prepared milk (*lait maternisé*, *lait de Gärtner*, *lait stérilisé de Val Brenne*). The scorbutic symptoms only appeared after the milk had been used for five to eight months. Some cases showed signs of rickets also. All the children had teeth—some more than the average number—and in every case the symptoms became manifest subsequent to the eruption of these. All had "spongy" gums or ecchymoses of the mucous membrane of the mouth, with salivation. Among the other important symptoms present he points to the condition of the legs, which were often extremely painful when touched, and which lay immobile, as if paralysed (*pseudoparaplégie douloureuse*), a condition associated with subperiosteal hæmorrhages. These were sometimes found very large, especially on the thighs, affecting one or other femur, sometimes both together.

In two cases there was a very marked cachexia, with profound anæmia and extreme pallor and much weakness, with venous hum on the neck, œdema of the legs, and purpuric eruption.

Moderate fever was present in one case (38.5° C.); in others profuse sweating, constipation, and some anorexia.

In dealing with the question of diagnosis, most importance was attached to the hæmorrhages from the gums, which seldom fails to appear when the infant has teeth; the presence of subperiosteal hæmorrhages, which appears early, even in mild cases; the pseudoparaplegic condition of the legs, and the history as to the manner in which the child has been reared.

As regards prognosis, these cases are most favourable where the diagnosis has been made early; but, even when scurvy has been recognised very late, there may be hope of a cure. In these cases, even when very bad, cure may be brought about with suitable treatment in two, three, or four weeks. This was the length of the treatment in the seven cases reported.

The treatment adopted was of the simplest kind. It consisted in giving fresh food or fresh milk, raw or just brought to boiling point. The cure may be hastened by the addition daily to the milk of a few teaspoonfuls of potato purée, or some juice of the orange or grape.

**Congenital Trophic Œdema** (*British Journal of Children's Diseases*, December, 1904).—Otto Grünbaum reports three cases:—

CASE I.—A male child, aged 3 months. The mother sought advice on noticing that the feet were swollen. The swelling was due to œdema, was symmetrical, and affected the feet alone. There were constrictions at each of the joints of the toes and at the ankles. The child was microcephalic.

The parents were healthy, and had another child, aged 2 years, quite healthy.

Cases II and III belonged to the same family. The mother of these children stated that her mother had swollen legs "during all her life," but there seemed to be some doubt as to whether the œdema was congenital; also that her own feet swelled towards evening, but were normal in the mornings. The father, though a painter, never suffered from lead-poisoning, nor from any other illness. The family consisted of three—the two patients and a boy, aged 6 years, who was normal.

CASE II was an intelligent, well-nourished girl, with well-marked œdema, affecting the feet, legs, and lower half of the thighs symmetrically, but most markedly the feet and ankles, the toes being very swollen and having constrictions marking the joints. The œdema was hard, especially when the legs were dependent for some time, and showed pitting only when pressure was prolonged; there was no tenderness, nor was there any evident change in the skin. Sensation to light touch, pressure, heat, cold, and pain was normal. A detailed examination of the blood taken from the finger, and also from the foot, before and after massage, went to prove that the œdema was due to excess of lymph in the connective tissue cells, and not to dilated lymphatics. The eosinophilia found present was suggestive of the affection being of a parasitic nature, though it was admitted to be quite within the limits of possibility that it was due to some intestinal parasite, and had no relation to the œdema.

CASE III.—A male child, aged 6 months, presented a very similar condition of feet and legs to his sister. The feet and legs were swollen, but the feet most. The skin was thickened, and, at the joints, constricted the toes into three almost spherical masses; the œdema of the terminal phalanges was so great that the plane of the toe was tilted to almost a right angle to the long axis of the toes. The soles of the feet were affected as well as the dorsa; the heels appeared to be normal.

There are many varieties of trophic œdema which tend to run in families; in some only, however, is it congenital. The writer believes his cures to be of the same nature as those described by Milroy, in 1892, in *New York Medical Journal* of that year, in a paper entitled "An Undescribed Variety of Hereditary Œdema." Reference is given here to twenty-two individuals in a family connection of ninety-seven affected with this complaint.

## DISEASES OF THE EYE.

BY FREELAND FERGUS, M.D.

**Metastatic Carcinoma of the Choroid.**—In the last number of the *Manhattan Eye and Ear Hospital Reports* Dr. Oatman gives another case of this somewhat rare malady, and reviews the cases already published. In most of them the primary tumour was in the breast, but in a fair proportion it was situated in the abdominal organs. In no fewer than ten out of thirty the affection was bilateral. The metastatic tumour is found invariably at the posterior part of the eyeball, originating in the choroid in the neighbourhood of the optic nerve. The tumour grows locally along the lymph channels, and as it extends leads, as might be expected, to separation of the retina.

Choroidal carcinoma is always metastatic, being due to the presence of tissue foreign to the choroid. Herein it differs entirely from sarcoma of the same membrane. As regards the question of tension, Dr. Oatman quotes the opinion of Mr. Devereux Marshall to the effect that in choroidal sarcoma the tension is increased in two-thirds of the cases, and normal in the remaining third. In carcinoma, the statistics collected by Dr. Oatman show that in one-third the tension is increased, and in the others it is normal or slightly diminished.

The prognosis as regards life is always very grave; indeed, so rapidly fatal are these cases as to make operation inadvisable except for the relief of pain.

**The Innervation of the Pupil.** By J. Herbert Parsons (*Royal London Ophthalmic Hospital Reports*, vol. xvi, part i).—This is a very scholarly paper, and one which we think must be for many years a standard. It contains a very complete bibliography, and an account of the author's own observations. It is impossible to give an epitome of the paper here. Our object is merely to call the attention of our readers to a piece of writing which is admirably suited as a work of reference on an important subject.

**Neurotomy Hook for the Division of the Optic Nerve deep in the Orbit.**—In the *Arch. d' Ophthal.* for November, 1904, Henry Joseph describes this ingenious instrument. Essentially it is a guillotine with which he is able to divide the optic nerve close to the optic foramen. The nerve has an orbital length of about 25 millimeters, and from the living subject he has been able to remove an eyeball with a piece of the nerve attached to it 23 millimeters long.

In removing eyes for intra-ocular tumours, especially in cases of glioma, it is important to divide the nerve as far back as possible. Many believe that the same rule should be observed in enucleating for the prevention of glioma. The instrument described by M. Joseph seems well adapted for the purposes intended.

**Posterior Capsulotomy for Secondary Cataract.**—Professor de Lapersonne, in *Arch. d' Ophthal.*, October, 1904, advocates, as Knapp and Da Gama Pinto have done before him, early discission after cataract extraction to rupture the posterior capsule. He says with great truth that the longer this small operation is delayed the tougher becomes the membrane, and the less its elasticity. As a matter of fact, he thinks that it should be divided about sixteen or seventeen days after the extraction; in some cases he does it as early as the eighth.

His operation differs from the one in general use, in so far as he makes a posterior discission instead of an anterior one. For this purpose he has

invented a special needle, the cutting part of which is very finely tempered, and made somewhat in the shape of a sickle. The shank is malleable, so that it can be bent to suit the orbital cavity. In performing the operation the pupil is widely dilated, and the eye is put deeply under cocaine; the field of operation is illumined by a bright electric lamp. The needle is introduced at the upper part of the eye, slightly above the apparent corneo-scleral margin, and is directed towards the centre of the eyeball. It thus passes behind the capsule; when the operator thinks that he has attained the centre, he lowers the handle of the instrument so as to make the point of the instrument pierce the capsule near the inferior border of the dilated pupil. By slowly withdrawing the needle the capsule is thoroughly divided, giving rise to a V-shaped opening. The operation seems to us a good one, although hitherto we have been much satisfied with the one devised by Professor Knapp.

**Melano-Sarcoma of the Limbus.** By George Houston Bell (*Knapp's Archives*).—All the cases reported of this disease show it to be extremely malignant. In view of this fact, the author, in common with most surgeons, believes that so soon as the diagnosis is indisputably made by pathological research, the eye should be at once removed. In the example under discussion the visual acuteness was  $\frac{3}{8}$  Snellen. Mr. Bell states his belief "that it is not fair to jeopardize the life of the patient by a compromise in the treatment in the way of an abscission, for all the cases cited by me have proved that abscissions are of no avail." Again he says, "after all is said and done, to my mind the radical treatment is by far the most conservative in the end." Almost all ophthalmic surgeons hold the same views on this matter, but at the same time it would be a very wrong thing to remove an eye possessed of excellent vision without a report from a thoroughly trained pathologist that the tumour in question is malignant.

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## PUBLIC HEALTH AND INFECTIOUS DISEASE.

By JOHN BROWNLEE, M.A., M.D. GLASG., D.P.H. CAMB.

**Eosinophilia as a Diagnostic Sign in Ankylostomiasis.**—In a further paper by Mr. A. E. Boycott, M.B., in the *Journal of Hygiene* for October, 1904, the value of eosinophilia as a diagnostic sign in ankylostomiasis is discussed.

The usual method of detecting the presence of this disease—and the only certain method—is the examination of the stools for the ova of the parasite; but this is often of great difficulty, and there is on the part of many miners a tendency to concealment of their condition, which makes it doubtful whether the specimens obtained are really from the persons themselves. Mr. Boycott suggests the examination of the blood for the percentage of eosinophilic cells present. He finds that, even although anæmia and loss of strength be not apparent in those infected with the disease, the percentage of these cells is on the average 18 per cent, while in persons unaffected it is only 2·5 per cent. The number of other diseases in which a marked eosinophilia occurs is small, and with a little care should cause no difficulty. Positive results take a little longer in microscopical examination by this method than in a direct examination of fæces, but negative results are reached much more rapidly. The two serious drawbacks to the method are, firstly, that as the eosinophilia persists for some time after actual cure of the patient, it does not necessarily indicate that he is still suffering from the disease; and, secondly, it does not yield sufficiently positive evidence of the presence of the parasite to justify immediate anthelmintic treatment. In every case, an absolute diagnosis can only be



made by finding ova in the stools. The method is designed, however, as a simple way of investigating a large number of men easily and quickly, to see if a suspicion of ankylostomiasis is thereby raised, of sufficient strength to justify the troublesome process of obtaining specimens of stools. The paper is well worth reading, for the discussion of the conditions under which this disease spreads in some localities, and fails to obtain a hold in others.

**Dysentery.**—By Dr. Castellani and Dr. C. Todd (*Journal of Hygiene*, October, 1904).—Two papers on the subject of dysentery are printed in this number. One is by Dr. Castellani, and deals with the nature of the dysentery found in Ceylon. He finds that by far the most frequent cause is the bacillus described by Shiga and Kruse, while an allied bacillus is apparently sometimes the cause. Amœbic dysentery, however, also occurs, and in it no agglutinative principle is found in the blood which has any action on any of the strains of dysenteric bacilli found in other cases. The other paper is by Dr. C. Todd, and relates to the preparation of an antitoxin for use in dysentery. He finds, with reference to Kruse's bacillus, that old broth cultures contain a soluble toxin, which is also present in the bodies of the young organisms. It is possible to immunise the horse to this, and thereafter the serum of the latter is found to contain a very powerful antitoxin which is capable of protecting animals, either when mixed with the toxin or when given separately, at any other part of the body, either at the same time or shortly before or after the toxin. The author has not used this therapeutically; but he refers to a paper by Rosenthal, who has treated 157 cases of bacterial dysentery with most encouraging results, apparently by means of a similar serum.

### *Books, Pamphlets, &c., Received.*

- Practical Manual of Diseases of Women and Uterine Therapeutics,** for Students and Practitioners, by H. Macnaughton-Jones, M.D. Ninth Edition. London: Baillière, Tindall & Cox. 1904. (21s. net.)
- Landmarks and Surface Markings of the Human Body,** by Louis Bathe Rawling, M.B., B.C. With 29 Illustrations. London: H. K. Lewis. 1904. (5s. net.)
- Gall-Stones and Their Surgical Treatment,** by B. G. A. Moynihan, M.S., F.R.C.S. Fully Illustrated. London: W. B. Saunders & Co. 1905.
- An Atlas of Human Anatomy for Students and Physicians,** by Carl Toldt, M.D., assisted by Prof. Alois Dalla Rosa, M.D. Translated from the Third German Edition and Adapted to English and American and International Terminology by M. Eden Paul, M.D. Sixth Section. *G. Neurology; H. The Organs of the Senses* (Figures 1134 to 1505 and Index). London: Rebman, Limited. 1904.
- A Text-Book of Medical Practice for Practitioners and Students,** edited by William Bain, M.D. With Illustrations. Longmans, Green & Co. 1904. (25s. net.)

- Light Energy: Its Physics, Physiological Action, and Therapeutic Applications**, by Margaret A. Cleaves, M.D. With numerous Illustrations in the Text and a Frontispiece in Colors. London: Rebman, Limited. 1904. (21s. net.)
- The Treatment of Syphilis**, by F. J. Lambkin, Lieut.-Col., R.A.M.C. London: Baillière, Tindall & Cox. 1905. (3s. net.)
- Diseases of the Heart: A Clinical Text-Book for the Use of Students and Practitioners of Medicine**, by Edmund Henry Colbeck, B.A., M.D. With 43 Illustrations. Second Edition. Revised and Enlarged. London: Henry Kimpton. 1904. (7s. 6d. net.)
- Year-Book of the Scientific and Learned Societies of Great Britain and Ireland: A Record of the Work done in Science, Literature, and Art during the Session 1903-1904.** Compiled from Official Sources. Twenty-first Annual Issue. London: Charles Griffin & Co. 1904.
- Reports of the Society for the Study of Disease in Children.** Vol. IV: Session 1903-1904. Editor: George Carpenter. London: J. & A. Churchill. (12s. 6d.)
- The Chief Operations of Ophthalmic Surgery: A Practical Guide for Students**, by Harold B. Grimsdale, M.B., B.C. London: *The Medical Times, Limited.* 1904. (5s.)
- Practical Nursing**, by Isla Stewart and Herbert E. Cuff, M.D. A New Edition. Edinburgh and London: William Blackwood & Sons. 1904. (5s. net.)
- A Text-Book of Human Physiology**, by Albert P. Brubaker, A.M., M.D. With Colored Plates and 354 Illustrations. London: Rebman, Limited. 1904. (17s. 6d. net.)
- Mental Defectives: Their History, Treatment, and Training**, by Martin W. Barr, M.D. Illustrated by 53 Full-page Plates. London: Rebman, Limited, 1904. (17s. 6d. net.)
- A Treatise on Bright's Disease and Diabetes, with Especial Reference to Pathology and Therapeutics**, by James Tyson, M.D. Second Edition, Illustrated, including a Section on the Ocular Changes in Bright's Disease and in Diabetes, by George E. de Schweinitz, M.D. London: Rebman, Limited. 1904. (17s. 6d. net.)
- The Edinburgh Medical Journal**, edited by G. A. Gibson, M.D., and A. Thomson, M.D. New Series: Vol. XVI. Edinburgh and London: Young J. Pentland. 1904.

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 17TH DECEMBER, 1904.**

	WEEK ENDING			
	Nov. 26.	Dec. 3.	Dec. 10.	Dec. 17.
Mean temperature, . . .	32·1°	41·3°	38·8°	40·4°
Mean range of temperature between day and night, . .	19·0°	25·4°	29·3°	37·1°
Number of days on which rain fell, . . . . .	3	5	4	7
Amount of rainfall, . ins.	0·46	0·43	1·02	1·90
Deaths registered, . . .	308	365	354	407
Death-rates, . . . . .	20·1	23·9	23·1	26·6
Zymotic death-rates, . . .	1·4	2·3	2·6	2·7
Pulmonary death-rates, . .	8·0	10·4	9·3	11·2
DEATHS—				
Under 1 year, . . . . .	84	98	97	97
60 years and upwards, . .	59	60	74	80
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	1	2	2	3
Scarlet fever, . . . . .	1	...	...	1
Diphtheria, . . . . .	5	4	2	5
Whooping-cough, . . . .	18	25	32	26
Fever, . . . . .	2	3	...	4
Diarrhoea, . . . . .	11	3	6	6
Croup and laryngitis, . .	1	...	1	0
Bronchitis, pneumonia, and pleurisy, . . . . .	99	120	121	129
CASES REPORTED—				
Small-pox, . . . . .	1	...	2	1
Diphtheria and membranous croup, . . . . .	18	15	14	14
Erysipelas, . . . . .	17	30	19	23
Scarlet fever, . . . . .	34	27	24	29
Typhus fever, . . . . .	...	...	...	5
Enteric fever, . . . . .	14	15	28	24
Continued fever, . . . .	...	...	...	...
Puerperal fever, . . . .	2	3	1	3
Measles,* . . . . .	85	113	145	99

\* Measles not notifiable.

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ORIGINAL ARTICLES.

MOVABLE DISPLACEMENTS OF THE KIDNEY.

By DAVID NEWMAN, M.D., F.F.P.S.G.,  
Surgeon, Glasgow Royal Infirmary.

(Continued from p. 328, vol. lxii.)

While hyperæmia from venous obstruction is common, *hydronephrosis*, to a degree sufficient to cause a perceptible swelling in the loin, is comparatively rare.

Temporary obstruction of the duct in movable kidney gives rise to symptoms exactly similar to those found in transitory hydronephrosis from other causes.

From a pathological standpoint, I have already drawn attention to transitory hydronephrosis and pyonephrosis as complications of movable kidney. They are not of pathological interest only; they are met with frequently enough to demand our attention also from the clinical side. I have already shown that displacement of the kidney may lead to impediment to the flow through the ureter in various ways:—(1) By kinking from rotation of the kidney on its short axis; (2) by obstruction from bending of the ureter in some part of its course; and (3) by occlusion of the lumen of the duct through angular insertion of the ureter into the bladder. Cases were

given illustrating each of these conditions. As stated above, I have seen only fourteen cases where the hydronephrosis was sufficiently large to be detected by the hand as a distinct swelling in the lumbar region. But judging from the symptoms observed in many other cases, I have little doubt that occasional and slight obstruction of the ureter occurs frequently, lasting, however, only for a short time—too short a time to allow much fluid to accumulate. The duration of undoubted cases of transitory hydronephrosis varies considerably. In ten of the fourteen cases just alluded to, the duration was not less than six hours. In some, the attacks extended over forty-eight hours, and in a very few lasted for days. As I have already demonstrated in published cases,<sup>1</sup> while the pelvis of one kidney is becoming distended, the function of the opposite organ may be suddenly inhibited, as shown by complete suppression. Examples of reflex inhibition of the functions of the kidney are numerous. For example, unilateral obstruction due to the presence of a calculus in one ureter may cause complete anuria, which may last for a considerable time. In some, the inhibition of the function of the healthy kidney occurs at once; in others, it is only when the hydronephrosis on one side reaches a certain point, that the kidney on the opposite side fails to act.

The following case is an example of an acute transitory hydronephrosis in which inhibition occurred at once:—

*CASE XIV.—Acute hydronephrosis from torsion of the ureter in a case of left movable kidney—Complete suppression of urine for nine days—No uræmic symptoms—Operation—Cure.*

J. A., a domestic servant, aged 25, was admitted to the Glasgow Royal Infirmary on 17th October, 1904, when she stated that five weeks prior to admission she for the first time suffered severe pain in the left lumbar region, but when questioned more closely she admitted having had frequently slight attacks of pain in that quarter at an earlier date. They were not, however, so severe as to preclude her from performing her daily duties as a domestic servant. Within the last month she had occasionally to seek relief by lying upon her left side in bed. There was neither difficulty nor pain in micturition. A week previous to admission the pain became much more severe, and the patient was strictly

<sup>1</sup> *Renal Cases*, 1899, p. 39, published by James Maclehose & Sons, Glasgow.

confined to bed. While constantly present, occasionally the pain got suddenly worse, and shot in various directions, but principally to the opposite lumbar region. The patient states that since the acute pain came on she has passed absolutely no urine, and on dressing to come to the hospital she noticed that her left side was greatly swollen.

On admission, there was marked distension of the left lumbar region, which was very tender on pressure, and in front of the swelling the kidney could be distinctly felt. The patient's general condition was fairly good, and there were no symptoms indicative of uræmic poisoning. The pulse was 80, the respirations were 18 per minute, and the temperature normal. A catheter was introduced, and the bladder was found to be empty. Heart and lungs normal.

*18th October.*—Dr. Newman examined the patient to-day, and found the pelvis of the kidney occupied by a large hydronephrosis. The sac extended from the costal margins to the crest of the ilium, and forwards to within an inch and a half of the middle line. The right kidney could not be felt with the hand, and there was no pain elicited on pressure, whereas on the left side the slightest pressure caused the patient intense suffering. A catheter was again introduced without any urine being obtained; and the patient has passed no urine since admission.

*21st October.*—On the morning of the 19th inst., patient passed urine for the first time since admission. It contained a slight trace of albumen, and on standing a mucous deposit containing leucocytes was thrown down. On the 19th inst., 35 oz. of urine was passed, and on the 20th inst., 30 oz., but, while urine was escaping from the bladder, the hydronephrosis steadily increased in size, so that this morning Dr. Newman opened the hydronephrosis from behind. At the operation, it was evident that the cyst had ruptured posteriorly very shortly prior to the kidney being incised. A considerable quantity of the fluid had escaped into the perinephritic fat, and this becoming distended formed loculi which, however, were easily separated and opened with the finger. The dilated pelvis of the kidney was exposed, but no calculus could be found either in the pelvis or in the ureter; the kidney was seen, however, to be freely movable. The fluid which escaped contained 1·7 per cent of urea.

*23rd October.*—On the 21st (the day of the operation), the patient passed 48 oz. of urine from the bladder, and at the same time a large quantity drained away from the wound.

The urine from the bladder contained a considerable quantity of albumen, but no tube-casts. The albumen continued present in steadily decreasing quantities for about a week, and by the end of that time the wound had almost completely healed, and very little urine then escaped from it. The patient was dismissed well, and the wound healed on the 18th November.

The interest of this case is in the circumstance that, almost immediately after the obstruction to the left ureter occurred, the action of the neighbouring organ became suspended, and although this continued for seven days, there was not the least evidence of toxic poisoning, either as indicated by general symptoms, by the character of the tongue, the pulse, or the temperature. The swelling, when first examined at the time of admission, was distinctly fluctuant although very tense, but on the morning of the operation, while the swelling was larger in size, the tension had become somewhat relaxed. This led me to suspect that rupture might have taken place, and urged me to perform nephrotomy at once.

As a rule, transitory hydronephrosis of one kidney is not associated with immediate suppression of the function of the opposite organ. The suppression usually only follows after a considerable interval of hours, or even of days. The suppression may be followed by albuminuria, and this may be limited to the urine which is excreted by the kidney opposite to the one which is hydronephrosed. Again, in cases of transitory hydronephrosis, the excretion of the opposite kidney may not be stopped, but only altered in character, the most marked changes being increase in the specific gravity and the presence of albumen. This is illustrated in the following case :—

CASE XV.—*Movable right kidney—Hydronephrosis—No suppression of urine—Albuminous urine from the left kidney only.*

A. C., æt. 37, enjoyed perfect health up till February, 1900, when she slipped on ice and received a severe bruise over the right lumbar region by falling against the edge of a snow box. Following the injury, she was confined to bed for a few days, and made what was thought to be a good recovery; but, as soon as she began to move about freely, she experienced pain in the right renal region, at first vague and slight, but as time passed steadily becoming more severe. In the following summer she began to complain of symptoms of gastro-intestinal

irritation, such as nausea, attacks of vomiting, and occasional diarrhoea, ailments from which she was entirely exempt prior to the accident. At the end of September, I was called to see her on account of an acute attack of renal colic which lasted for three hours only, and had passed off before I arrived. On palpation, I found the right kidney to be freely movable towards the middle line, downwards as far as the iliac crest, but no enlargement could be detected. The urine was clear, and beyond a trace of albumen nothing abnormal was detected. The albumen disappeared next day, and continued absent; the urine was examined morning and evening, and instructions were given that, should the pain recur, all samples of urine passed should be kept separately. The next attack of severe pain occurred on 15th October, when I was at once sent for. The patient said that she had been walking in the morning, and shortly after she returned home the pain began (12:30 P.M.), and continued increasing till the time I saw her (2 P.M.). On palpating the kidney, it was found to be slightly increased in size and resting at the level of the crest of the ilium. At the onset of the pain, after passing 8 oz. of urine, the patient took to bed, and she felt easiest when she was lying upon her back with the knees elevated. When, however, the pain had considerably increased (8 P.M.), she could no longer lie on her back, but she sat up in bed with the chest thrown well forwards and the knees tightly drawn up and held by the arms. At 10 P.M. the swelling was very marked in the right lumbar region, and filled up the whole space between the costal margin and the iliac crest, and extended forwards to within 3 inches of the umbilicus. A third of a grain of morphia was given at 6 P.M. without much effect, and the same dose was repeated at 10:15 P.M. Hot baths and gentle massage were prescribed.

*10th October.*—The patient passed a tolerable night under the influence of two-thirds of a grain of morphia, but when she was seen at 8:30 A.M. to-day, the swelling and pain had considerably increased. The nurse stated that at 7 o'clock A.M. the patient had been very sick. Half a grain of morphia was administered.

*17th October.*—As no relief has been obtained by medical treatment, and the patient is now much exhausted by pain and want of nourishment, no food having been retained since yesterday morning, an operation was performed to-day. The kidney was exposed and incised. Thirty ounces of urine was evacuated, and the organ fixed.



1900.	Quantity in Ounces.	Sp. gr.	REMARKS.
Oct. 15, 8:30 A.M.	12	1017	Normal.
12:30 P.M.	8	1014	" pain began.
4 P.M.	6	1020	
9 "	7	1022	
" 16, 4 A.M.	5	1024	Trace of albumen, gradually
10 "	6	1024	increasing in amount from
3 P.M.	7	1022	4 P.M. on the 15th till 12:30
9 "	4	1026	A.M. on the 18th October.
" 17, 6 A.M.	8	1024	The urine removed from
12 NOON	5	1026	the hydronephrosis was nor-
(Operation)			mal, sp. gr. 1010, and did
6 P.M.	7	1018	not contain albumen.
" 18, 12:30 A.M.	12	1012	
6 "	11	1008	No albumen.

The patient made a perfect recovery, and enjoyed good health thereafter.

Regarding the character of the urine in this case as contrasted with the one immediately preceding it, note may be taken of the circumstance that while the hydronephrosis was accumulating in the right kidney, the left kidney continued to perform its functions, with, however, a sudden and maintained rise in the specific gravity of the urine, also a steadily increasing trace of albumen in that eliminated from the bladder, while the fluid removed from the hydronephrosis by operation was free from any abnormality, the specific gravity being, however, low, namely, 1010.

The two cases just described illustrate the more persistent forms of obstruction. In the majority of cases, however, the impediment to the escape of urine is of short duration, and has been described under the term, "transitory hydronephrosis" or "intermittent hydronephrosis." Such cases I fully discussed some years ago at the Clinical Society of London.<sup>1</sup>

By becoming infected by pyogenic organisms, a hydronephrosis may become converted into a pyonephrosis. The conditions which predispose to, and the factors which excite an invasion of the kidney by microbes, were considered in a discussion which I had the privilege of introducing at the meeting of the British Medical Association in Edinburgh in 1898, and this subject was more fully elaborated in a paper published in the *Glasgow Hospital Reports*, vol. iii, p. 354. In movable kidney, the danger of septic infection is not great.

<sup>1</sup> *Clin. Society Trans.*, 1896, vol. xxix, p. 55.

While I have seen a considerable number of cases in which suppuration of the pelvis or of the renal substance have co-existed with mobility, in one instance only have I seen a pyonephrosis develop from a hydronephrosis while the case was actually under observation. The case being, in my experience, unique, it may be worthy of record.

*CASE XVI.—Old-standing movable right kidney—Occasional attacks of transitory hydronephrosis—Sudden infection by bacillus coli and streptococcus pyogenes.*

J. C., aged 61, the mother of nine children, was seen by me first in 1896, and then presented the usual symptoms and physical signs of a freely movable right kidney. At that time she had, however, few attacks of severe pain, but she suffered from most of the milder inconveniences of the displacement. The first attack of severe pain which could be clearly referred to ureteral obstruction occurred on 7th July, 1899, and lasted for five hours. From that date until the end of 1901, she suffered from several recurrences, the duration of these varying from three to ten hours. No pus was discovered in the urine, although it was regularly and carefully examined, until 10th February, 1902, when a distinct muco-purulent deposit appeared, coincident with a subsidence of the renal swelling. For her relief an operation was advised, but this she declined. A fortnight later, however, complete obstruction occurred, and relief becoming imperative, the distended pelvis was incised and 28 oz. of purulent urine was evacuated, and on bacteriological examination it was found to contain bacillus coli and streptococcus pyogenes. The patient, who was greatly reduced in strength, made a very slow but an ultimately satisfactory recovery.

5. *Those in which both local symptoms and reflex functional disturbance are marked.*—This class includes the most severe cases of movable kidney. Not only are the gastro-intestinal symptoms pronounced and the functions of the kidney markedly interfered with, but in some there may be symptoms indicative of more remote reflex functional disturbance, as exemplified by derangement of the circulation or respiration, or of alterations in sensation. In one case, I have observed complete anæsthesia of the mucous membrane of the bladder, the patient being unable to micturate spontaneously for several weeks. These remote reflex symptoms are regarded and designated by some observers as "purely hysterical," a term the exact import of which has not, as far as I am

aware, been defined. It is one commonly used to imply an attempt to counterfeit disease on the part of the patient. Does it not really, in most instances, serve as a convenient cloak for the ignorance of its creator when he is confronted with numerous and perplexing symptoms, the intimate pathology of which he has little knowledge? These remote reflex symptoms of movable kidney may be seen in patients who have very perfect mental control, and where the suggestion of either partial or complete suspension of inhibitory mental influence at any time could not be entertained. But while this is true in some cases, in many others the patients are distinctly void of self-control and given to exaggerate their suffering, and sometimes even to mimic diseased conditions. It is therefore extremely difficult for the surgeon, unless he makes a very careful study of the individual case, to say how far the reflex phenomena are actual or assumed, but to conclude that in all instances they are the result of morbid mental conditions is very apt to lead one into serious error.

CASE XVII.—*Movable right kidney—Hæmaturia from right kidney only—Painful micturition without disease of the lower urinary tract—Severe pain in renal region—Marked attacks of dyspnœa—Disappearance of symptoms after operation.*

Mrs. M'G., æt. 30, housewife, was admitted to the Glasgow Royal Infirmary on 11th June, 1897, complaining of pain on the right side of the abdomen and of difficulty in micturition.

Patient states that twenty-one weeks prior to admission she was suddenly attacked by pain in the bladder. This was of a scalding character, and occurred both during the act and for some time thereafter. At the same time she noticed that the urine was very high in colour, as if it contained blood. Two days later she was seized with sudden severe pain in the right side of the abdomen and in the lumbar region. Accompanying the pain there were sickness and vomiting. The symptoms were aggravated by movement, but while at rest she obtained relief. After being present for about two months the pain suddenly disappeared, and at the same time her urine became natural in colour. This interval from suffering lasted only for a week, when the pain returned, and the blood reappeared in the urine. Since then the pain had come and gone five times. Since the onset of the illness the patient has lost flesh considerably.

There was nothing special in the family history. The lungs and heart were healthy. Beyond the pain referable to the

urinary tract, the patient suffered from marked dyspeptic symptoms, namely, flatulence after taking food, sickness, headache and occasional vomiting, painful defæcation, and constipation. She was anæmic and emaciated.

On admission the urine was amber coloured, and there was a trace of albumen. Blood and sugar absent. A considerable quantity of mucus was deposited with a few leucocytes and epithelial cells, but no tube-casts.

*15th June.*—A cystoscopic examination made to-day showed several small blood clots near the opening of the left ureter, but otherwise the bladder was healthy. The uterus was found to be enlarged, and there was tenderness over both ovaries. No mobility of the kidney could be detected.

*20th June.*—An examination made to-day showed the right kidney to be freely movable and distinctly enlarged, and when pressed upon, even gently, considerable pain was complained of.

The most interesting feature in the case was that when the kidney was displaced the patient almost immediately suffered from marked dyspnoea, the face became livid, and the pulse slow and feeble.

In an attack she had to-day immediately after the examination (from 10 to 11 A.M.) the respirations numbered 8 per minute and the pulse 60 per minute. This condition of matters lasted for about thirty-five minutes, then the attack slowly passed off, the respirations at 11.15 A.M. being 20 and the pulse 78 per minute. On enquiring into the history of the case more minutely in respect to such attacks, it was found that she had eight prior to admission, and, as far as could be made out, these occurred only when the kidney was displaced.

*21st June.*—This morning blood appeared in the urine, and when a cystoscopic examination was made it was found to be escaping from the right ureter only. The mucous membrane of the bladder was perfectly healthy.

*25th June.*—Nephrorrhaphy was performed to-day.

She was dismissed well on 3rd August, and reported herself on 26th August, when the kidney was found to be firmly fixed in the lumbar region somewhat closer to the spine and lower down than normal. She again returned on 27th September, and reported that there had been no return of the pain, of the hæmaturia, or of the breathless attacks.

From the history of the case, and from what was seen by examination, it appears that the painful micturition as well as the attacks of dyspnoea were reflex phenomena. The bladder

was healthy, and blood was seen to proceed from the right ureter only, while both the lungs and heart were normal. If clots had formed, one could explain the pain in the bladder as the consequence of obstruction; but on no occasion, as far as could be ascertained, was there any evidence of actual impediment to the escape of urine, and although clots were seen adhering to the bladder close to the orifice of the right ureter, these were so small that they would not obstruct the urethra.

The following case, although the symptoms are very different in character, is capable of a similar explanation:—

*CASE XVIII.—Movable right kidney, with onset of symptoms characterised by marked respiratory and digestive disturbance—Local symptoms at first trivial.*

The patient I saw at Uppingham, with her family physician, and he told me that when he was asked to see her in October, 1902, the first symptoms were those of acute gastro-intestinal disturbance. On making an abdominal examination, he found the right kidney freely movable, but the patient did not complain of pain in the renal region, and the urine was found to be strictly normal. Dr. Lyon Smith regarded the case as one in which the gastro-intestinal disturbance was due to the displacement of the right kidney. He ordered rest and the application of an abdominal bandage and kidney air-pad, with the result that she enjoyed good health till May, 1904. He noticed that the symptoms were present only while, or immediately after, the kidney was displaced; and he maintained, and in this I agree with him, that there was no "hysterical" element in the case.

The patient was an extremely quite, sensible woman. Dr. Lyon Smith wrote to me, saying—

"In May of this year I was called hurriedly to see her, on account of a 'suffocative attack.' I found her walking about the room very flushed and anxious looking, breathing very quickly (about 80 shallow inspirations per minute; pulse very small and thready, 110 per minute). The attack resembled one of angina, except that the face was flushed rather than pale."

The heart and lungs were free from any organic disease. During June and July, while the patient was permitted to move about, and the kidneys occasionally became displaced, these attacks were frequent: but with complete rest they soon disappeared, and with medicinal treatment her general health improved. The conclusion Dr. Lyon Smith came to was that

"the suffocative attacks were caused by the movements of the right kidney setting up a sudden disturbance of the sympathetic nervous system," and when the kidney was kept at rest the attacks ceased.

The patient came to Glasgow, and I had her under observation for over three weeks, and from what I saw I am convinced that Dr. Lyon Smith's explanation is correct. We are very familiar with gastro-intestinal symptoms as a result of movable kidney, but marked respiratory disturbance is uncommon. I have seen a few instances similar to, but much less marked, than the two cases just described, but in most of them the patients were easily excited, and in many, if not in all, I was unwilling to admit the possibility of reflex irritation. In this case, and in the one preceding it, I think we have clear examples of reflex functional disturbance directly resulting from the displacement of the kidney.

The *physical signs* observed in movable kidney vary much in individual cases. If the patient be much emaciated and the kidney freely movable, a tumour of characteristic renal form may be felt, and when the patient assumes the elbow-knee position sometimes its outline may even be seen resting against the anterior abdominal wall. At the same time, a flattening or depression in the corresponding lumbar region may be observed. In a certain number of cases, even where the symptoms are marked, the kidney may not be detected by the hand, and the condition present can be demonstrated by an exploratory incision only. In many instances—in short, stout persons—I have diagnosed the condition from the symptoms alone, operated, and found the kidney freely movable. In other instances, a very movable kidney may be discovered on one occasion, while at a later examination nothing abnormal can be felt. It is a safe rule never to be satisfied with one examination, and not to declare that the kidney is not movable because it cannot be detected on a particular occasion. Palpation may not only show the kidney to be movable, but it may also prove the kind of displacement present. Whether it becomes rotated on its short axis, or simply moves upwards, downwards, or inwards, in many instances the hilum presents upwards and inwards, as represented in Fig. VIII, vol. lxi, p. 351, or it may be turned downwards and inwards. When the patient lies on the opposite side to that of the movable kidney, the convex border of the organ is generally tilted towards the middle line while the posterior aspect looks directly outwards instead of backwards. When

the kidney is rotated on its short axis generally the upper pole presents forwards, or the kidney may turn a somersault, the upper pole hanging downwards as represented in Fig. VII, vol. lxi, p. 350. From various causes the size of the organ may be altered. Generally, enlargement takes place, and this may arise either from passive hyperæmia, a result of venous obstruction, from hydronephrosis or pyonephrosis, from tubercular disease, or from cystic degeneration.

The sensation communicated to the hand by the movable kidney can scarcely be mistaken for any other swelling. The kidney forms an oblong, hard, and resisting mass, the lower extremity is rounded, the surface very smooth: it is easily pushed in various directions—downwards, upwards, and laterally—and glides with great facility into the lumbar region. In most cases, the abdomen is so flaccid that the organ can be easily grasped by the hand, and when it is manipulated a sickening and peculiar faint sensation, frequently accompanied by pain shooting down the thigh and lower part of the abdomen, is produced. When the hand is applied to the postero-lumbar region, a depression may be felt when the kidney is displaced, but when it is thrust back to its normal position the natural sense of resistance in the renal region is restored. On the other hand, in some instances the space vacated by the kidney becomes filled up by fat, and so the normal sense of resistance is maintained. While some patients have the power, by muscular effort, to throw the kidney out of its place, in others, when the organ has been restored to its normal position, it is sometimes difficult to displace it again. This circumstance is frequently of diagnostic value. In a considerable proportion of cases the kidney may occupy the iliac fossa, so that considerable displacement may exist without any foreign body being felt through the abdominal parietes.

Palpation is most effectually carried out by placing the patient in the supine posture, with the knees drawn up and chest slightly elevated, so as to relax the abdominal muscles. Occasionally it is necessary to palpate with the patient lying prone, turned on one side, sitting, or standing erect. It is always well to divert the patient's attention from the examination, engage her in conversation, and occasionally ask her to breathe deeply. By so doing the muscles of the abdomen are rendered lax. The hands of the surgeon should be warm, and, to begin with, the examination should be made with the whole hand laid flat on the abdomen. With steady pressure, gradually increasing in degree, but varying

from time to time—not by a sudden push with the points of the fingers—one hand should be pressed deeply into the interval between the crest of the ileum and the costal margins behind; while, in front, the other hand is opposed to it, so as to grasp the parts, at first gently, afterwards firmly, between the two hands. By bimanual palpation conducted in this way, the size, form, position, and consistence of the organ can be made out, or the presence of fluctuation ascertained. This examination should be made, first, with the patient lying on his back, afterwards lying upon his face, and, if necessary, in the elbow-knee position. If the kidney is easily felt by palpation, the conclusion may be come to that the organ is either enlarged or displaced, or both. It is most easily felt during full inspiration. Examination should first be made without the use of an anæsthetic in order to ascertain the degree of muscular resistance and the amount of tenderness or pain produced by pressure, and, if there is much more muscular rigidity and pain over one kidney than over the other, the fact should be noted. Before examination, the bowel should be carefully cleared out by a laxative and by enemata, to remove fæcal accumulations in the ascending or descending colon which may seriously interfere with the examination.

On percussion over the renal region posteriorly, when the kidney is displaced a tympanitic note may be elicited, but a dull note is not got over the displaced kidney, but rather a muffled tympanitic one. This, of course, is due to the fact that anteriorly the kidney is covered by a layer of bowel.

The note obtained on percussion over the renal region in cases of movable kidney showed me how unreliable percussion is to be depended upon as a means of diagnosis as to the position of the organ, unless it is considerably enlarged. In displacement of the kidney without enlargement, very little difference was observed in the percussion note; by this means alone it would be impossible to tell when the kidney was in an abnormal position and when it was in its proper place. The sense of resistance on percussion, and the feeling communicated to the hand when it was applied to the region, give more trustworthy results.

The value of the percussion note heard over the lumbar region depends upon the amount of emaciation, and whether the displacement is on the right or left side; and when it is remembered, as long ago pointed out by Skoda, that the bulk of a normal kidney had little to do with the diminished resonance in the lumbar region, one is prepared to admit that,



in the majority of cases, percussion fails to give reliable information.

If, however, some morbid process has caused enlargement or distension of the movable kidney, the normal resonant area of the loin will be encroached on from behind. The patient should be examined recumbent, in the vertical position, or standing erect. The renal enlargement can very often be accurately limited by percussion, but in some instances—for example, in cystic kidney—a resonant note may be obtained even where the enlarged kidney is easily felt with the hand; and while it is very easy to fix a clear limit by palpation, an area of diminished resonance may gradually pass to that of complete dulness.

The respiratory movements may influence the position of the kidney—deep inspiration generally presses it down, and forced expiration causes it to ascend, while the posture of the body tends greatly to alter its situation. When the patient sits up the kidney falls towards the pelvis; when she lies on her sides the kidney inclines towards the middle line or away from it as the case may be; and if she assumes the supine posture the organ passes back to its proper place.

The following description of the movements of the kidney I received from a doctor who suffered from movable kidney for many years. My patient writes:—

“I think you wanted me to state the degree of mobility of my kidney during respiration. I can demonstrate this to myself very readily—much better, indeed, than another man can feel it, since I have a double guide—the sensation in my fingers and the sensation in my kidney.

“1. In the erect position, (1) with the kidney down, its lower border can be felt on a level with the anterior superior spine of the ileum. Tranquil respiration causes a scarcely perceptible vertical movement, just recognisable by the fingers placed lightly over the lower edge of the kidney, while forced respiration in this position produces a movement of nearly an inch. (2) With the kidney up in its normal position, and kept there by the tips of the fingers of both hands pressed deeply into the lumbar region along the lower border of the liver, the kidney is felt moving very distinctly during ordinary respiration, and the fingers have to be kept well pressed backwards to retain it *in situ*. Even then it tends to escape outwards (*i.e.*, to the right) with each inspiration. On forced inspiration, again, it descends with such energy that the fingers are pushed forwards until a certain point is reached, when it slips suddenly from under them and gets into its

abnormal unsupported position. This descent is accompanied by a tendency to the right, and, I think, by a certain amount of rotation, bringing its convex border downwards towards a horizontal position.

"2. In the recumbent (supine) position it falls spontaneously under the ribs, and takes up nearly its normal site. In this position the respiratory movements have much less effect on it, but forced inspiration still causes a distinctly perceptible descent. When the fingers are deeply pressed in under the lower costal border, so as to replace it fully, the movement on inspiration is much more decided.

"The extreme vertical range of the kidney movement (in any position) between complete expiration and full inspiration is about  $1\frac{1}{2}$  inch."

Beyond hydronephrosis and pyonephrosis it is not here necessary to consider the physical signs of movable kidney when the organ is diseased as well as mobile.

When the pelvis becomes distended, the organ tends to become fixed, or less movable than under ordinary circumstances. The physical characteristics are those of a renal swelling, but, in addition, fluctuation can be made out or a wave impulse may be felt. As the swelling increases, so also does the suffering, but frequently, before the hydronephrosis has attained a size sufficient to attract attention, the obstruction is relieved—indicated by a subsidence of the pain and a sudden and copious discharge of urine of low specific gravity. This is quite characteristic of transitory hydronephrosis, but after the pelvis has become empty, the kidney may remain very tender for some days.

Pyonephrosis is a comparatively rare occurrence in movable kidney. The physical signs are similar to those just described as characteristic of hydronephrosis, but the nature of the fluid which escapes and the constitutional symptoms accompanying the malady are sufficient to clear up the diagnosis. In pyonephrosis, the kidney is not only enlarged, but it is also very tender to the touch, and the suffering of the patient is in excess of what is usually seen in simple hydronephrosis; there are sudden exacerbations of pain, and these are generally associated with a diminution in the amount of pus in the urine, with fever and vomiting. A free discharge of purulent urine precedes a subsidence of the acute symptoms. There is a sudden reduction in the size of the swelling, and the patient is relieved only for a short time.

As a general rule, the *diagnosis* of movable kidney is easy.

The symptoms are generally characteristic, and a movable swelling can be felt under the costal margin, which presents the peculiar renal form, is sensitive to the touch, and has a marked tendency to slip upwards underneath the ribs. When complicated by the presence of other abdominal tumours or enlargements, errors are apt to arise. Not uncommonly, the movable kidney is atrophied as a consequence of the disturbed circulation, but on the other hand it may be enlarged from passive hyperæmia or from distension of the pelvis by retained excretion. Movable kidney is one of those conditions which are very apt to be overlooked, simply because it is supposed to be rarely met with in practice, and, though generally recognised as a possible accident, yet the contingency is occasionally not taken into consideration in diagnosing the case. I have had cases sent to me as instances of movable kidney where, on detailed examination, the malady has proved to be entirely different—for example, an enlarged gall-bladder, a movable spleen, malformation of the liver, enlarged mesenteric or lumbar lymphatic glands, a fecal accumulation, an abscess, a malignant tumour of the colon, or a pedunculated tumour of the ovary.

The diseased condition with which movable kidney is most apt to be confounded is enlargement of the gall-bladder. The physical signs which distinguish a distended gall-bladder from a movable kidney are these—the position which it occupies, the fact of the lower part of the tumour being more freely movable than the upper, of the lower end being more rounded and less resistant to pressure, and the presence of an occasional sensation of fluctuation; if, in addition to these, there be evidences of obstruction to the gall-ducts, such as jaundice, the absence of bile in the stools, &c., then the probability is in favour of the swelling being a distended gall-bladder. It can be felt at all times against the anterior abdominal wall, whereas a movable kidney occasionally eludes detection. A gall-bladder containing calculi is harder than the kidney, whereas a simple distended gall-bladder without calculi is softer. When the symptoms are not sufficiently characteristic to establish a diagnosis, tapping of the gall-bladder has been recommended by some observers. Such a proceeding is not only highly dangerous, but is unreliable, as frequently the contents of a distended gall-bladder are so altered as to be unrecognisable. In these difficult and doubtful cases, an exploratory incision should be made and the true nature of the case established, when it can be treated according to the special requirements. It should

be borne in mind that movable kidney and distended gall-bladder are not infrequently present together in the same person—indeed, some observers maintain that the two conditions have a certain etiological relationship one to the other.

Movable spleen may be distinguished from a kidney by the fact that it lies immediately beneath the anterior abdominal wall, and over it the percussion is dull. It is easily movable in an upward direction, and there is also a clear area to percussion between it and the spine. I have seen several examples where movable spleen has given rise to doubt, but the diagnosis has always been easily cleared up by careful percussion.

Abnormalities of the right lobe of the liver may complicate the diagnosis of right movable kidney. In cases where the patient has been in the habit of tight lacing, a portion of the lower part of the right lobe of the liver may become almost isolated from the main body of the organ and may move backwards and forwards. I have seen only one instance of this kind, where the right lobe of the liver was elongated in a tongue-shaped process, which extended almost down to the crest of the ileum. The right kidney was freely movable, but could only be palpated through this thin mass of hepatic tissue. This led to the belief that the movable kidney was much enlarged. At the operation, the kidney, while movable, was found to be little increased in bulk, and the apparent enlargement was fully explained.

Enlargement of the mesenteric glands and tumours of the omentum are often difficult to distinguish from movable kidney. Their movements, however, are generally limited to the middle third of the abdomen. They are usually rounded in form, and nothing corresponding to the hilum can be detected. There is not the usual sickening pain produced by pressure, nor is there evidence of the absence of the kidney from its normal position. The percussion over the swelling is dull, and it does not slip into the lumbar region as a movable kidney does. In tuberculosis the glandular enlargement affects both sides, and is accompanied by evidence of tuberculous disease in other parts. The swelling is not limited to the renal region, but extends across the aorta, the impulses of which are communicated to the anterior abdominal wall.

Fæcal accumulations, fæcal and perityphlitic abscesses, are not likely to be mistaken for movable kidney; but on one occasion I met with a case where the diagnosis was rendered very difficult. While the physical signs and some of the

symptoms clearly indicated the presence of a faecal mass in the upper part of the ascending colon, there were also indications of a transitory hydronephrosis, which recurred on five separate occasions. The mass within the colon was about the size of a normal kidney, but more rounded in form. The mass softened and disappeared after treatment, when the right kidney could be easily felt, and a *x*-ray photograph demonstrated the presence of a small calculus in the right ureter. When first examined, the case was thought to be one of movable kidney with transitory hydronephrosis.

Cancerous tumours of the pylorus, although sometimes very freely movable, are not likely to be mistaken for movable kidney, although instances have been sent to me where the resemblance between the two conditions has been rather striking, and where the gastric disturbance was attributed to a renal condition rather than to a pyloric; and, conversely, I have known of instances where the distended stomach, so frequently found in movable kidney, was attributed to pyloric obstruction, and an operation proposed. While in such, fortunately rare, instances confusion may arise, in the larger proportion of cases there is no difficulty. One characteristic of cancer of the pylorus is that on no occasion can the tumour be made to disappear as the swelling can be in movable kidney. In old persons, tumours of the upper part of the ascending and of the descending colon may be readily mistaken for movable kidney when the physical signs alone are considered. I have seen a carcinoma of the upper part of the descending colon so freely movable that several experienced physicians and surgeons mistook it for a movable kidney, and, in the absence of symptoms pointing to derangement of the functions of the alimentary tract, the diagnosis for many months remained obscure. The diagnosis was completed by an exploratory incision and the tumour was removed.

Small pedunculated ovarian tumours, such as fibro-myomata, located either on the surface or in the substance of the ovary, may lead to some difficulty in diagnosis. The size and form of the mobile body, the possibility of tracing the tumour to its attachment, and the tendency to increase in size or remain stationary, will help to clear up the case. When the ovarian tumour is large, a mistake in diagnosis is not likely to be made. When small it may be freely movable, and a certain diagnosis may be difficult. The signs of most value are the superficial situation of the growth, its tendency to steadily increase in bulk, and dull percussion anteriorly; also the fact

that the subjective symptoms are not marked, lead one to presume that the growth is of ovarian origin. In ovarian cysts both loins are resonant, the intestine being almost invariably behind the swelling. In a few cases the intestine has been found fixed to the anterior surface of an ovarian cyst, and, on the other hand, occasionally in a very large hydronephrosis the intestine may get behind the bulk of the fluid: consequently, the presence of resonance in front does not preclude the possibility of an ovarian cyst, nor its absence that of a renal swelling. Excepting these rare cases, the position the intestine occupies in relation to the swelling is the most reliable guide in diagnosis. Ovarian tumours make their appearance in the lower part of the abdomen, a little to one side of the middle line, whereas, in the cases of transitory hydronephrosis in movable kidney, the swelling extends from the lumbar region downwards and forwards. I have never seen even the smallest ovarian tumour, solid or fluid, where the swelling could be reduced into the loin behind the ribs.

*(To be continued.)*

## EPILEPTIFORM ATTACKS COMPLICATING DOUBLE OVARIAN TUMOUR: REMOVAL OF GROWTHS, FOLLOWED BY CESSATION OF ATTACKS.<sup>1</sup>

By A. W. RUSSELL, M.A., M.B.,

Assistant Surgeon, Samaritan Hospital for Diseases of Women;  
Assistant Physician, Maternity Hospital.

EPILEPTIFORM seizures associated with the most diverse exciting causes are familiar to every medical man, and cessation of the attacks has been frequently reported as a result of the removal of the apparent source of the irritation or by cure of the disorder which had acted as the exciting cause. Such widely differing states as diabetes, astigmatism, the presence of worms, the onset of an infectious fever, exophthalmic goitre, lead poisoning, alcoholism, and even the use of tobacco have all been credited as etiological factors in this trouble. It is not matter of surprise, therefore, if we find

<sup>1</sup> Read at a meeting of the Glasgow Obstetrical and Gynaecological Society held on 23rd November, 1904.

sometimes that disturbance of function and disease of the genital organs are described as complicated by epileptic attacks. When there has been genital irritation, circumcision has cured the irritation and stopped the attacks, and the treatment of an injured and diseased testicle has had a similar result. Cases of epilepsy associated with amenorrhœa and vicarious menstruation, cured by the use of iodide of potassium, were reported in the *Lancet* nearly fifty years ago. Other references are found scattered through medical literature to cases in which disordered menstruation, uterine stenosis, and other conditions were found in patients who were also the subjects of epilepsy, and where such patients were cured of their epilepsy when the local diseased condition was removed. There is an interesting class of cases in which epilepsy develops at puberty. I remember one very marked case of this kind which some years ago gave her parents grave concern for some time, but, fortunately, the persistent use of bromides and the stopping of school work, with attention to dietary, open-air exercise, &c., were ultimately followed by complete cure. It has not been easy, however, to find any record of cases such as the one I wish to report to-night, where epileptiform attacks seemed for a time to occur at the menstrual periods and coincidently with the growth of the ovarian tumour now placed on the table. My investigation of the literature of the subject is by no means complete, but so far as I have gone I have been unable to find any parallel case, and there is certainly no reference whatever to such cases in any of the most recent British or American works. Apart from the immediate success of the operation and the size and nature of the tumour, the case is worth recording on account of its complication.

M. P., aged 31, unmarried, an attendant on mental cases, first consulted me in October, 1899, on account of a typical epileptic attack. She gave a history of similar attacks beginning about three years previously, when she was about 24 years of age, and these had continued to recur about the time of the menstrual periods for a year. There were no further attacks of which she was conscious till this recent fit, which overtook her while she was on duty as an asylum attendant. She had missed one menstrual period, and menstruation had lately become more scanty. The continuous use of bromides was ordered, and great care in regulation of the digestive organs and the action of the bowels was advised. In November she again had two fits, just before the time

for menstruation. The necessity for more persistent use of bromides was impressed on her, and she was advised to give up her work as an asylum attendant, which happened to be in a ward where the patients were chiefly epileptics. She reported herself to me in April, 1903, when she seemed to be in good health, and made no complaint of abdominal tumour or even of any discomfort. She had had only three or four fits in the interval. She had been for some time acting as a private mental nurse in Belfast.

The history of her case, taken in the Samaritan Hospital a month or two later, shows that she had been conscious of an abdominal swelling in October, 1902, and that she had had considerable abdominal pain during the month preceding her holiday in April, when she reported herself to me. In May, while still in Belfast, she had a very serious illness, and was seen in consultation by Dr. Campbell, who agreed with the diagnosis of peritonitis and abdominal tumour, and expressed a fear of torsion of the pedicle as a cause of the illness. Recovering somewhat from the attack, she was brought home to the neighbourhood of Glasgow, and on 1st June I was asked to see her. Under my observation for a few weeks the tumour seemed to grow rapidly, and she was taken into the Samaritan Hospital on 6th July, and I operated on 8th July with the assistance of Dr. West and the House Surgeon. On making the abdominal incision, the peritoneum was found to be 'thickened and adherent. A considerable quantity of old blood-clot was found adhering to the visceral aspect of the peritoneum, and in one or two places this clot had the appearance of being covered with peritoneum. A large quantity of blood-stained fluid also escaped. As the contents of the upper cystic part of the tumour refused to run through the trocar, the incision was enlarged and the tumour was removed entire, the pedicle, which showed no signs of torsion, being clamped, cut through, and then stitched across after securing the vessels. The tumour proved to be a growth of the left ovary, though lying chiefly on the right side. The right ovary, being enlarged about three times normal size and covered with warty growths, was also removed. After washing out the abdominal cavity with normal saline solution, the abdominal wound was closed with buried catgut sutures of the peritoneum and fascia and supporting sutures of silkworm gut. The patient made a good recovery, was allowed to get up on 28th July, and discharged on 2nd August. The patient's waist measurement at the time of operation was  $34\frac{1}{2}$  inches. The tumour weighed almost  $10\frac{3}{4}$  lb.; and measured



in length  $12\frac{1}{4}$  inches, and in circumference at its long axis, 26 inches, and at its short axis,  $19\frac{3}{4}$  inches.

This patient soon after her discharge from the Samaritan Hospital became again a private attendant for mental cases, and has been engaged without interruption up to the present date. I made enquiries a week ago, and heard from her in reply to the effect that she has never had the slightest semblance of an attack since her operation, and that her only complaint is that she is getting too fat.

A study of the case convinces me that there has been a distinct causal relation between the commencement of the pathological changes in the ovaries and the onset of the epileptiform attacks. This was not a case where epilepsy was a characteristic of the patient's life from adolescence, but where the first attack occurred about the age of 24 or 25. I am not forgetting that any form of trauma in an epileptic is often followed by a lessening of the frequency, or even by a temporary cessation of the attacks; but there can only be one opinion as to the desirability of curing the local disorder, whether it is menstrual, uterine, or ovarian, by appropriate treatment, in cases where there is also epilepsy, in the hope that the latter may also at the same time be relieved.

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### VULCANITE RING PESSARY WORN FOR FIFTEEN YEARS AND CAUSING SYMPTOMS SIMULATING MALIGNANCY IN A WOMAN, AGED 60.<sup>1</sup>

By G. BALFOUR MARSHALL, M.D., F.F.P.S.G.,

Gynæcologist, Royal Infirmary, Glasgow; Lecturer on Obstetrics and Gynæcology, Western Medical School, Glasgow.

MRS. T., who stated that her age was over 60 (she looked several years older), and that menstruation had ceased twenty-six years ago, was admitted to the Glasgow Royal Infirmary last October complaining of pelvic pain, dysuria, and a blood-stained vaginal discharge of some months' duration. Fifteen years ago, after lifting a heavy weight, her "womb came down," as she expressed it, and the resulting symptoms sent

<sup>1</sup> Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 23rd November, 1904.

her to a medical man, who inserted a pessary which afforded relief. The patient stated that this pessary had never been removed, and that she still wore it. For the next five years she felt quite comfortable, but after this time she began to experience slight pain in the pelvis when she walked much or sat for long in one position, and about the same time a yellowish vaginal discharge showed itself. The painful symptoms and discharge continued, but although at a later date the pain became much more severe, she did not care to seek medical advice. During the last few months the pain had become very severe, so much so that the patient stated she did not know how she had stood it so long. The discharge became blood-stained, but latterly it had consisted mostly of pure blood. For some time there had been increased frequency of micturition, with difficulty in starting the flow, and more or less pain during the act.

From the history of the case, I suspected carcinoma of the cervix uteri, which had already spread so far as to involve the bladder wall.

*Examination.*—The rounded lower end of what I took to be a vulcanite Albert Smith pessary presented at the ostium vaginæ, but, on attempting to pass the finger into the vagina, the instrument was found to be completely buried in its whole extent. The finger, indeed, could only be passed for half an inch or so into the vagina, when it came in contact with what felt like granulation tissue, as on forcing the finger onwards the vaginal walls could be separated in the middle line. This, however, gave rise to hæmorrhage, so an extensive separation was not attempted. Careful examination revealed no indurated tissue, no ulcerated surface, nor fœtid discharge characteristic of malignancy, so that it was evident that the pessary had caused ulceration and become completely embedded in the vaginal walls. It was not, however, till operation that it could be determined what had actually occurred.

The pessary was an ordinary vulcanite ring, 3 inches in diameter. As the natural shrinkage and atrophy of the vagina following on the climacteric took place, the pessary, now proving too large, gradually ulcerated its way into the lateral vaginal walls and posterior fornix, finally becoming completely buried by the mucosa healing over it. At a later date, probably indicated by the onset of the blood-stained discharge, ulceration had occurred on both anterior and posterior vaginal walls, giving rise to granulation tissue which, uniting, completely occluded the vagina, nearly down to the ostium vaginæ. This tissue was easily separated by the

finger till the vaginal vault was reached, hæmorrhage being considerable while this was being done. The pessary itself, however, could only be removed after cutting through a tough band of tissue, averaging quarter of an inch in depth. The ring, when removed, was as fresh as if just from the maker, and none the worse of a fifteen years' sojourn in the vagina.

The opinion I formed was that the pessary had probably been buried for years beneath the mucosa, and that the later severer symptoms, especially those of hæmorrhage, were due to ulceration of the anterior and posterior vaginal walls.

There are numerous cases quoted in the literature of the damage that neglected or badly fitting pessaries can cause, even to the extent of ulcerating into neighbouring viscera, but I have thought this case worth recording owing to the age of the patient and the presence of symptoms which justified the very natural suspicion of advanced malignant disease.

## NOTES ON A CASE OF UTERUS DIDELPHYS WITH SEPTATE VAGINA.<sup>1</sup>

By DONALD DUFF, F.R.C.S. EDIN.,  
Surgeon, Glasgow Central Dispensary.

MALFORMATIONS of the female generative organs, especially the major forms, are comparatively rare. Accurate statistics of the occurrence of these conditions are almost impossible to obtain. Some of them, *e.g.*, hermaphroditism, hypospadias, and abnormalities of the external organs are easily enough detected and noted at birth. Cases of atresia in its various forms giving rise to hæmatocolpos or hæmatometra may be recognised about puberty, on account of their obvious symptomatology, and these cases are fairly well recorded: but others, such as cases of double vagina, double uterus, and cases where only a partial fusion of the ducts of Müller has taken place, may remain unrecognised throughout life, as *per se* they usually give rise to no symptoms, and unless they happen to be seen *post-mortem* they are never known. One can only give a relative proportion of cases of maldevelopment met with in the course of ordinary gynæcological examinations, for many of them are only noticed casually while the patient

<sup>1</sup> Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 23rd November, 1904.

is being examined for some other condition, at the lying-in period, or during the performance of abdominal section.

The case I bring before you to-night was the only one seen in Dr. Balfour Marshall's clinique at the Glasgow Royal Infirmary in the course of between 6,000 and 7,000 examinations. There is no specimen of septate vagina and uterus in the Royal Infirmary Pathological Museum.

The history of the case is as follows :—

On 23rd September, 1903, a patient, unmarried, attended at the Out-door Gynæcological Department of the Glasgow Royal Infirmary, complaining of severe scalding pain about the vulva, worse when passing urine. There was increased frequency of micturition, and a profuse yellowish discharge was present. The symptoms had commenced rather suddenly four days previously, and were getting much worse. Menstruation was of the  $\frac{2}{3}$  type, and was not accompanied by pain. Examination showed the presence of a urethritis and vulvo-vaginitis which, from its appearance and history, was diagnosed as gonorrhœal. No cultures were made from the pus, nor was it considered necessary to examine the discharge for gonococci. The vaginal discharge was very profuse, and this continued as a marked feature of the case. The external genitals, urethra, and vagina were thoroughly swabbed with a 5 per cent solution of protargol, and this treatment was repeated thrice weekly for a considerable time without much effect on the discharge. Iodoform pessaries were then tried in addition to the swabbing, and the urethritis and vaginitis improved slightly, the scalding pain disappeared; but there was still, at the end of three months' treatment, a large quantity of pus about the vulva.

On 7th January, 1904, while the parts were being treated as usual, special attention was paid to a slight thickening about the hymen on the left side. This thickening had been noticed before, but had been considered simple œdema. On putting the apparently swollen parts on the stretch a small dimple was seen to the left of the vaginal orifice, and on putting the nozzle of the syringe—about the size of a No. 6 catheter—into the dimple, and using a little pressure, it slipped into a cavity containing pus, and about the depth of the patent vagina to the right. This proved to be the opening of another vagina, and being filled with pus was the source of the profuse discharge. This cavity was cleansed with 5 per cent solution protargol, and an iodoform bougie was introduced. A week later the parts had improved considerably, and I enlarged the opening by an antero-posterior incision so as to admit the forefinger. The treatment for the gonorrhœa was continued.

On 21st January, palpation showed the presence of two distinct vaginae of equal length—two cervixes, the left being smaller and slightly posterior to the right, and a distinct inter-vaginal septum, complete from hymen to between the cervixes. It was not possible to palpate the fundus of either uterus, and as there was still some discharge the sound was not passed. Patient, who in the meantime had been married, stated that she had not menstruated for two months.

The patient was not seen till 11th February, and she stated then that two weeks previously she had had sudden pains in the lower abdomen, and what she called a flooding. Some clots were passed, and her doctor, who was called in, told her she had a two and a half months' miscarriage. This probably took place from the right uterus, as the right vagina had been all along patent, and the pains were felt more towards the right side. There was no hæmorrhagic discharge when the patient was seen on this date, but some pus was present.

On 8th March the discharge had almost disappeared, and after cleansing the vulva and vagina thoroughly a sound was passed on both sides. On the right side the sound passed  $2\frac{1}{2}$  inches, and showed the uterus to lie in the hollow of the sacrum and directed to the right sacro-iliac synchondrosis. On the left side the sound passed  $1\frac{1}{4}$  inch only, and showed the left uterus to lie more downward and backward than the right and directed to the left sacro-iliac synchondrosis. The passage of two sounds at once, one into each uterus, showed that both uteri were distinctly separated down to the os externum, an appreciable space being felt between the sounds in each cervical canal. The vaginal septum seems to be proving a source of annoyance, and its removal was proposed; but, as the patient has now contracted syphilis, this operation has been deferred.

This case is interesting from the point of view of development, and perhaps I may remind you of the origin of the internal generative organs in the female. These organs are derived from three structures in the embryo, viz., the Wolffian bodies, the ducts of Müller, and the genital glands.

At the end of the first month the Wolffian bodies are seen as two longitudinal ridges of heaped up mesoblast on either side of the embryonic spinal column and extending from the upper dorsal regions to the pelvis, where the ridges become approximated. This Wolffian ridge shows on section three structures.

1. The Wolffian duct, situated towards the dorsal aspect of the ridge and internal to the other structures; its origin is

a question of debate among embryologists. Kollman and other recent observers show, however, that it arises as a longitudinal invagination of somatopleuric epiblast.

2. The Wolffian tubules, arising from the intermediate cell mass.

3. The Müllerian ducts, situated most externally and ventrally on the ridge, and arising as an invagination of the mesothelium of the coelum or body cavity, the upper end of this invagination retaining its connection with the body cavity as the fimbriated end of the Fallopian tube.

To the inner side of this Wolffian body in the lower dorsal region another heaped up ridge of cells is seen, the genital ridge, from which arises the genital gland or ovary. The Wolffian ducts, as I have stated, in the upper part of the Wolffian ridge, lie towards the mesial side of the Müllerian ducts, but further downwards, *i.e.*, towards the pelvis, the Müllerian ducts become mesial and ventral to the Wolffian ducts. The Müllerian ducts in the female coalesce, and form the tubes, uterus, and vagina.

During the third month two distinct stages in the course of the Müllerian ducts can be seen.

1. A lumbar stage, where the Müllerian duct lies to the inner side of the Wolffian ridge, and is suspended from the posterior abdominal wall by the Wolffian mesentery. This part becomes the tube, and the mesentery the mesosalpinx.

2. A pelvic stage. Here the posterior ends of the Wolffian ridges fuse, and form what is called the genital cord, consisting of the two Müllerian and the two Wolffian ducts.

In the genital cord the fusion of the Müllerian ducts takes place, and they then pass backward between the Wolffian ducts. This point is of importance, as it is here that the renal bud arises from the posterior aspect of the Wolffian duct and forms the ureter and permanent kidney. This passing backward of the fused Müllerian ducts explains the normal relationship of ureter to uterus and vagina.

The Müllerian duct is a later development than the Wolffian, and if its origin were from any cause delayed, so that before the fusion took place in the genital cord the ureters had already been formed and become implanted into the allantoic vesicle in front, fusion of the Müllerian ducts would be interfered with, and a persistent double utero-vaginal tract result, the ureters entering the bladder between the horns of a double uterus. It is interesting to note that in some of the marsupials this condition actually occurs, *e.g.*, in the didelphians the ureters, instead of surrounding the genital cord, become engaged

in Müller's ducts and prevent their union. It is known that in the human species the ureters sometimes enter the bladder abnormally, even on the anterior surface, and it would clear up the point if one could find the remains of the Wolffian ducts as Gärtner's canals in sections of the intravaginal septum of a case of double uterus and vagina, or if on catheterising the ureters, the ureteral catheter was found to pass to the inner side of uterine sounds introduced into the two uteri.

In nearly all vertebrates, except monkeys and man, traces of the original division of the genital canal into two are seen. In fishes, amphibians, reptiles, and lower mammals, a double vagina and uterus is met with. Higher up the scale, rodents, *e.g.*, rabbit, hare, squirrel, have a single vagina with double uterus. In the carnivora a single vagina with uterus bicornis unicollis occurs. In accordance with Von Baer's law we would expect to find all these varieties in the developmental process of the human foetus, and this is what actually happens. At the second month we have a double utero-vaginal tract. At the third month a disappearance of the septum between the portions of Müllerian ducts forming the cervix is seen. At the fourth month the human genital organs are the same as those met with in the carnivora, *i.e.*, single vagina with uterus bicornis unicollis—the last part of the septum to disappear being that near the fundus.

Development may be arrested at any stage in the fusion of the ducts of Müller, and I have mentioned a probable cause of want of union of the whole tracts. I notice in last week's *Lancet*<sup>1</sup> a report of a case read by Dr. Rankin Lyle, of Newcastle, before the Edinburgh Obstetrical Society, where double uterus and vagina were found at a Cæsarean section, and a distinct band of peritoneum passed from the bladder to the rectum between the two uteri. Dr. Lyle makes no mention of the ureters, but it is possible they entered the bladder beneath this peritoneal reflection.

I may mention what appears to me to be at least a hypothetical cause of these cases of uterus bicornis where the vagina and cervix is single.

Part of the Wolffian ridge stretches forward and becomes attached at the groin, this part being called the inguinal fold. Into this fold muscle cells grow backward from the internal oblique and transversalis, these muscle fibres forming the muscular element in the round ligament and its homologue in the male, the gubernaculum testis. These inguinal folds are attached to the Müllerian ducts at the point where the

<sup>1</sup> *Lancet*, 19th November, 1904, p. 1422.

future division between tubes and uterus takes place, and one can easily conceive that any shortening of these folds will keep the uterine horns apart and prevent the complete formation of a fundus.

I have mentioned these as probable theories, and I trust that the discussion and the expressed opinions of the more experienced gynæcologists present may help to throw some light on the subject. I may mention that I am indebted to Dr. Balfour Marshall for permission to bring this case before you, and also for his courtesy in allowing me to treat the case in his clinique.

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## NEW OUT-PATIENT DEPARTMENT AT THE WESTERN INFIRMARY.

OF recent years it has come to be recognised that the out-patient department of a hospital attached to a medical school occupies a very important place. There it is that the student is brought face to face with a very large number of cases. While a considerable proportion of these are of such a nature as to require, and obtain, indoor treatment, there is always a majority whose ailments are not sufficiently severe to warrant their admission to the wards. The former are seen and the diagnosis gone into with the students by the outdoor staff, while the latter form a new field of study altogether, and a very important one, for the future practitioners. The students have opportunities in the wards of again seeing the serious cases, but they must attend the out-patient department regularly if they are to learn what after all will make up a very large proportion of their future practice.

Up till now, the accommodation at the Western Infirmary Dispensary has been far from ideal from the point of view of the patient, the teacher, and the taught. The consulting-rooms were cramped and stuffy, dressing-rooms practically non-existent, and the benches for the students were so arranged that very little could be seen from them. Carrying out treatment in the surgical side was a matter of difficulty; the consulting-room had to act as operating theatre, and this at the close of the day's work, when the atmosphere was thoroughly vitiated. If more than one case requiring an anæsthetic came up—and frequently there were three, four, and five—there was no recovery-room available, and the patients had to come to in various corners of the room which



was serving at the time as an operating theatre. Little wonder that the advent of better things was looked forward to! Now all that is changed. The consulting-rooms are admirably suited both for examining patients and for teaching, and the operating theatre is as well appointed as anyone could desire. These, along with the arrangements in the throat department, the spacious waiting-hall with its roof-light and its ventilation, and the automatic system of circulating the patients, from their entry to their exit, give evidence of guidance from the hand of a man who has a grip of the needs of a teaching hospital where both patients and students have to be catered for. That we refer to Dr. Mackintosh will not be a surprise to many both here and out of Glasgow, where his genius as a hospital organiser is now so well known. The new out-patient department is a monument not only of his devotion to the Infirmary, of which he is the respected medical superintendent, but of the way in which he has gone, heart and soul, into the subject of hospital construction.

The new building for the out-patient department, which was opened on 18th January, is situated to the west of the main infirmary block, and is entirely isolated from it. The Dispensary forms part of a scheme for the extension of the infirmary to the west, and will be joined to the infirmary by a well-lit corridor. Entering off this corridor is the electrical department, conveniently placed for both infirmary and out-patient departments, consisting of a "light" room, 18 feet by 15 feet, electrical room, 50 feet by 18 feet, all fitted up with the most up-to-date electrical appliances, a physician's retiring-room, and a suite of rooms on the first floor for the accommodation of nurses attached to this department.

The entrance to the Dispensary proper is from Church Street, which runs north from Dumbarton Road, where the main entrance to the infirmary grounds is situated. Entrance and exit gates are provided leading to courtyards separating the entrance and exit doorways. Patients enter by the east doorway, and, under the control of the porter, are directed, on their first visit, into the waiting-room for new patients, where all enquiries are made, the old patients passing into the general waiting-hall.

The new patient's waiting-room is 26 feet by 16 feet, and is in communication with a diagnosis-room for the examination and classification of cases. The diagnosis-room is lighted by a vertical and roof-light on the north side, and adjoining it is a well-lit room for the isolation of any suspicious or infectious cases. This room has a separate door to an ambulance court.

The general waiting-hall, 86 feet by 31 feet, is seated for over four hundred persons; the patients are classified into groups, for convenience of distribution into the various surgical and medical consulting-rooms; suitable male and female lavatory accommodation is provided in open courts adjoining the waiting-hall.

From the waiting-hall the communication corridor leads eastward to the main operating theatre—30 feet by 29 feet—with gallery accommodation for sixty students. This room is lighted by vertical and roof-light from the north, and has attached to it a sterilising and a recovery room, the latter divided for male and female patients, and above this is a nurses' room for the preparation and storing of surgical dressings, &c. Immediately to the east of the waiting-hall is the surgical dressing-room, fitted with arm and foot sinks, and divided by enamelled slate partitions into separate compartments.

Small lobbies lead off the waiting-hall to the medical and surgical consulting-rooms with their necessary dressing-rooms. These five consulting-rooms are 24 feet by 24 feet, each having gallery accommodation for fifty students. The lighting, as in the operating theatre, is from the north.

At the west end, the communication corridor leads into the ear, nose, and throat rooms, consisting of a consulting-room, 30 feet by 24 feet, having gallery accommodation for fifty students (lighted as before) and communicating by a sliding door with a dark room, 37 feet by 24 feet, fitted with eighteen stalls for the examination of patients by artificial light.

From each of the consulting-rooms separate doors lead to the exit corridor, which runs along the entire north and west walls of the building, and ends in the dispensary waiting-hall. This hall (30 feet by 19 feet) is seated for seventy persons, and has two service openings, with sliding doors from the dispensing-room, and adjoins the exit vestibule near the street.

The dispensing-room is 30 feet by 20 feet, and is furnished with all the most modern fittings and appliances. Adjoining this room is the laboratory, which contains the aerated water machine and an outfit of steam pans. Connected with the laboratory is a fireproof room for the storage of inflammables.

There is also a basement for the storage of surgical dressings, &c., with a good hoist. A subway will eventually lead from this basement to the new west ward block.

The walls and floors have been carefully considered from a sanitary point of view. The floors are terrazzo throughout,

except in the waiting-halls, where the patients are seated, the floors there being woodblock. The walls of the vestibules and waiting-halls are faced with terra cotta and majolica; the consulting-rooms, dressing-rooms, and corridors being finished with glazed tiles, the whole being designed with a view to facilitate cleanliness.

Various devices have been employed for the easy and mechanical control of the patients and their passage through the buildings, the doctor in charge of each consulting-room being able to signal to the general waiting-hall for a new patient as he passes the former one out into the corridor, which has lettered tiles directing to exit, thus preventing wandering over the building.

All basins, sinks, &c., have been specially designed to suit the requirements of such a building. The access door for students is on the first floor at the east side of the building, and from this a corridor, with cloak-room accommodation, leads directly to the upper level of the galleries in the various consulting-rooms; one stair only being provided at the west end of this corridor.

Accommodation has been provided for the janitor over the dispensing-room and waiting-hall in the south-west corner.

The building has been constructed from plans prepared by Mr. John James Burnett, A.R.S.A., and Mr. Thomas Young, engineer, has had charge of the lighting and heating.

The heating is done by low-pressure hot water, on the Reck patent circular system, the circulating water being warmed by steam, which is taken from the main boilers of the infirmary. The steam is led into a heating chamber in the basement of the dispensary, where it is reduced to a low pressure before being applied to the heating system. The circulating apparatus is erected partly in this chamber in the basement, and partly in a small room on the upper floor, and from it the main hot water pipes are lead into the ducts. These ducts are built under all the corridors in the dispensary, and in them the hot water flow and return pipes are arranged on the two-pipe system.

The apparatus is divided into three main circulations, each running the whole length of the building, and each separately controlled by valves.

From the main pipes in the ducts a flow and return branch is taken through the floor to each radiator.

There are 115 of these radiators in the various rooms, representing 6,200 square feet of heating surface, or 1,000,000 British thermal units per hour.

The steam condensed at the circulator in the production of the heat is all conveyed to the receiver of an automatic pump, which delivers it into the feed tank in the boiler-house.

The ventilation is arranged on the extract principle, four electric fans being used for removing the vitiated air. The incoming fresh air is introduced into the ducts at several points through copper gauze screens. It is first tempered by passing over the supply pipes mentioned above, and then passed through registers into the rooms of the dispensary. These registers are placed, for the most part, in the walls immediately behind the radiators and about 6 inches above the floors.

The extract registers in the consulting-rooms and other rooms are placed in the ceilings connected to shafts formed in the roof. There are two systems of shafts, each leading to one of the fans.

The large waiting-hall is separately ventilated by two fans, fixed in turrets formed in the roof.

The apparatus, as described above, is capable of maintaining a temperature of 60° F. in the rooms, and 60° F. in the waiting-hall, when the temperature of the outer air is 25° F.

The fans are able to change the air in the rooms six times an hour, and in the large waiting-hall they can be made to change the air ten times an hour.

The building is lighted throughout by electricity, the supply being obtained from the infirmary's own installation. The mains are led from the engine-room through the subway into the dispensary, the switchboard being placed at a convenient point in the corridor.

The whole of the wiring is carried out on the distributing board system, all the safety fuses being grouped together on fuseboards placed in convenient positions.

The branch wires are encased in steel tubing, having screwed joints, fixed on the surfaces of walls and ceilings.

The steel tubing forms a perfect mechanical protection for the wires, and as all the tubing is carefully "earthed" at a number of points, the risk of shock and fire is entirely eliminated.

The number of lights throughout the new dispensary is about 400.

The various fittings have been specially designed to suit the apartments in which they are fixed and the purpose for which they are intended.

No pains have been spared to make the new annexe as perfect as possible. The plans cannot be said to have been hastily conceived; and these were finally accepted only after

Mr. Burnet and Dr. Mackintosh had visited the various new hospitals in Denmark and Germany, and had seen the practical working of the latest improvements.

The Managers of the infirmary are to be congratulated and the staff are to be envied in the possession of such premises in which to carry on their work among the out-patients.

An increase in the staff of this department of the infirmary has been rendered necessary. The following is the list of the present staff:—

*Physicians*—H. E. Jones, M.B.; James Carslaw, M.B.; J. M. Cowan, M.D., F.F.P.S.G.; J. S. M'Kendrick, M.D., F.F.P.S.G.; R. Fullarton, M.B., F.F.P.S.G.; J. C. M'Clure, M.B.

*Extra Physicians*—F. J. Charteris, M.B.; R. D. Campbell, M.B.; A. B. Sloan, M.D.

*Surgeons*—J. Morton, M.B.; G. H. Edington, M.D., F.F.P.S.G.; F. Macrae, M.B.; A. MacLennan, M.B.; Archd. Young, M.B.; M. L. Taylor, M.B.

*Extra Surgeons*—W. W. Christie, M.D.; C. C. Cuthbert, M.D.; A. H. Edwards, M.B., F.R.C.S.Ed.

*Gynaecologists*—J. M. Munro Kerr, M.B., F.F.P.S.G.; E. H. L. Oliphant, M.D., F.F.P.S.G.

*Extra Gynaecologists*—G. N. Turner, M.B.; S. J. M. Cameron, M.B.

*Aural Surgeon*—T. Barr, M.D., F.F.P.S.G.

*Throat Surgeon*—J. Walker Downie, M.B., F.F.P.S.G.

*Vaccinator*—J. W. Nicol, M.B.

*Dental Surgeon*—W. D. Woodburn, L.D.S.

*House Surgeons*—J. Young, M.B.; W. Dow, M.B.

## Obituary.

WILLIAM MOORE, M.B., C.M., Ayr.

WE are sorry to learn of the death, from pneumonia, of Dr. Moore, of Ayr. A native of Newmilns, Dr. Moore received his medical education in the University of Glasgow, where he graduated M.B. and C.M. in 1876, "with commendation." He subsequently became Medical Superintendent of the Ayr County Hospital, to which institution he was

latterly Consulting Physician. He also held the posts of Parochial Medical Officer and Public Vaccinator for Ayr and Dalrymple, and was a Certifying Factory Surgeon. His death, at the comparatively early age of 52, comes as a surprise, and his loss will be much felt in Ayr. He is survived by a widow and four daughters, to whom we tender our respectful sympathy.

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## CURRENT TOPICS.

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**PUBLIC HEALTH APPOINTMENT FOR GLASGOW GRADUATE.**—The post of Medical Officer of Health for Scarborough, vacant by the appointment of Dr. Dittmar as Medical Inspector under the Local Government Board for Scotland, has been obtained by Dr. John Knight. Dr. Knight, who has been for some time Assistant Medical Officer of Health for Glasgow, graduated in the University of Glasgow in 1896, taking the degrees of M.B. and C.M. with honours, as also the Brunton Memorial Prize, awarded to the most distinguished graduate of the year. He obtained the D.P.H. Cambridge in 1898, and, in 1902, graduated M.D. Glasg. He has held several important appointments in public health, having been Assistant to the Professor of Forensic Medicine and Public Health in the University, and Resident Assistant Physician to the Fever Hospital at Belvidere. There were forty-three applicants for the post which he has now obtained, and we have to congratulate him on his success.

**JOHN REID PRIZE.**—This prize, the competition for which is open to registered students of medicine of not less than two years' standing and to qualified medical men of not more than two years' standing, who are still attached to one of the medical schools as *bona-fide* students, has just been awarded by the trustees to Mr. James Taylor, Dunalister, Castlehead, Paisley, a student of St. Mungo's College, Glasgow. The prize, of the annual value of £25, is for the best original research conducted in one of the hospitals or scientific laboratories in Glasgow, bearing on any department of medical science. Mr. Taylor's thesis is entitled "Prostate Gland: Anatomy of, and

Pathology of Enlargement." The research was conducted in the Pathological Laboratory of the Royal Infirmary.

SCOTTISH VOLUNTEER AMBULANCE TROPHY.—At the Annual General Meeting of the Scottish Volunteer Medical Officers' Association, held in Glasgow, it was unanimously agreed that the 1905 competition for the Scottish Volunteer Ambulance Trophy should be held in Dundee. This annual competition, according to the regulations which govern it, must be held each year in a different centre, and the great success of the inaugural competition, held in May last in Glasgow, under the presidency of Surgeon-General Sir William Taylor, K.C.B., has stimulated the enthusiasm of the Volunteer medical officers of Dundee. Drs. Lennox, Kinnear, and Halley, the local members of Council, have already secured the patronage of the Lord Provost and Magistrates of Dundee, while Surgeon-General Keogh, the recently appointed Director-General of the Army Medical Service, has expressed his intention of being present. The Glasgow Highlanders, having secured the trophy last year, are debarred for a season from competing; but, as three Glasgow teams headed the list on the previous occasion, and as several Glasgow teams are likely to enter this year, there is every chance of the fame of the Glasgow Volunteers being maintained so far as ambulance work is concerned.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS): GLASGOW COMPANIES.—The annual gathering of the companies was held on 9th December last in the Pavilion Theatre. There was a good turnout of the members and their friends, and the performance of the various artists was thoroughly appreciated. During an interval in the middle of the evening, the prizes were distributed to the various winners by Colonel Hughes, P.M.O., Scottish District. Colonel Hughes was accompanied by Lieut.-Colonel Geddes, D.S.O. (Maryhill), and others, and was supported by the officers of the Glasgow companies. An interesting part of the proceedings was Sergeant-Major Kenny's receiving the medal for "long and meritorious service." Colonel Hughes pinned the coveted decoration on the veteran's breast, and spoke in very complimentary terms of the recipient. Colonel Beatson, C.B., in addressing the companies, referred to the present unsatisfactory state of Volunteer affairs generally; the chief source of trouble was the uncertainty of the future of the force. The pipes and drums contributed to the evening in

no mean fashion, and altogether the gathering was an undoubted success.

ROYAL ARMY MEDICAL CORPS (VOLS.) "ANNUAL."—The current issue of the *Annual*, which has now reached its fourth year, appeared at the annual gathering. This number is an improvement on its predecessors; it contains a larger number of pages, and is more fully illustrated, and it is printed on paper which shows up the blocks to the best advantage.

In the case of a medical corps there are no long lists of shooting results with which to fill the columns of the *Annual*, and, accordingly, the matter in the present publication differs considerably from the annual gazettes of the other Volunteer corps. The work of the season, the inspection, camps, field day, &c., are duly chronicled, but, in addition, there are several interesting articles on the neighbourhood of Netley, the seat of the annual camp. These are illustrated by maps and photographs, and are intended to act as a guide to the members in camp as to where to go when off duty. This section of the *Annual* is headed "Per mare, per terras," and in the present number the Isle of Wight, New Forest, and a drive through London are given in some detail. A new feature this year is the appearance of a racy article by Captain Kelly, of the Aberdeen companies, in which he describes the amalgamation of the Aberdeen and Glasgow companies at Netley. There is also a description of work at Stobs, by Major Moffat, of the H.L.I. Brigade Bearer Company; and further, we have, under the heading "The Old Brigade," a series of reminiscences by old Volunteers. Among the latter is an article from the pen of Dr. Alex. Robertson. We must not omit to mention, also, the widow Rintoul's side-splitting reflections on the Volunteers.

Captains Halliday and Wright Thomson are to be congratulated on this addition to the literature of the Glasgow corps, and we wish a long life to the instructive and, withal, entertaining *Annual*.

PRESENTATION TO CHAPLAIN OF CITY FEVER HOSPITAL.—An interesting function took place on 13th ult., when a large company of medical men, including Professor Sir William Macewen, Dr. J. W. Allan, and Dr. A. K. Chalmers, assembled to do honour to the Rev. Ebenezer Hall, Chaplain to the City Fever Hospital, on the occasion of his golden wedding. The chair was taken by Dr. Chalmers, the Medical Officer of



Health, who mentioned that during Mr. Hall's long tenure of office, extending to more than thirty years, no fewer than 104 resident physicians had passed through the hospital. He had much pleasure in calling upon Sir William Macewen, who was the first Superintendent of Belvidere Fever Hospital, to make the presentation. Sir William Macewen expressed his great pleasure at being called upon to fulfil such a pleasant task. He described the condition of Belvidere when he took up the appointment of superintendent, the hospital proper being non-existent, and how wooden huts were rapidly erected to cope with the rush of patients. Although he had not been personally associated with Mr. Hall, he had abundant evidence of the high esteem and regard in which he was held by everyone who had been on the hospital staff. He asked Mr. Hall to accept the cheque (£121) as a token of love and esteem from the contributors. Mr. Hall said he was quite unable to express in words the feelings which filled his heart. He gave many reminiscences of his long connection with Belvidere, and concluded by thanking the company, in his wife's name and his own, for their handsome presentation. Bailies W. F. Anderson and Dick bore testimony to the value of Mr. Hall's labours in the fever hospitals of the city. Dr. J. W. Allan, formerly Physician Superintendent of Belvidere, claimed, in common with all Belvidere men, Mr. Hall as a close personal friend. He indicated the thoroughness with which Mr. Hall performed his work, and how he followed up the patients after they left the hospital, sparing no effort in leading them to a higher life. He considered that from Mr. Hall he had received the most valuable part of his education. A hearty vote of thanks was proposed by Councillor Willock to Sir William Macewen for making the presentation. A similar compliment was paid to the Chairman.

PREVENTION OF CONSUMPTION: WORK AT PAISLEY.—The annual meeting of the Paisley and District Association for the Prevention of Consumption was held on 13th January—Sir Thomas Glen-Coats, Bart., presiding. After the reports and financial statement, showing a credit balance of over £1,200, had been submitted, the Chairman said that the Association had secured, on favourable terms, a building at the Bridge of Weir Sanatoria for the accommodation of Paisley patients. He was informed that in Paisley alone there were between 400 and 500 people ill of this disease, and that annually something like 150 deaths occurred within the burgh from consumption. These figures must make everyone feel

the importance of the work being carried on by the Association, and should stimulate the people of Paisley and district to give the Association increased financial aid. Dr. Donald Fraser mentioned that during the three months the Paisley Sanatorium had been open 15 male and 7 female patients had been admitted. Of these, 4 left of their own accord, 1 left incurable, 2 died, and 1 left cured, while there were 9 males and 5 females presently in the home.

**DISEASE AND MARRIAGE.**—The Rev. Dr. John Watson, better known perhaps as "Ian Maclaren," has created some sensation by a sermon preached at Liverpool on the "Ideal of Health." No young man, in his opinion, was justified in marrying unless he could obtain a first-class life certificate from a good insurance company. The same was true regarding the young woman. "There are higher things than health. Yes; but what choice have the children been given? Many of the noblest men and women have been fighting disease all their lives. But marriage, after all, is not necessary, and the future should be bravely faced." Dr. Watson would advocate the prohibition by law of marriage between persons suffering from any deadly disease.

**SEQUEL TO A SMALL-POX SCARE.**—The difficulties encountered by local authorities in their endeavour to stamp out outbreaks of infectious disease were exemplified in an action raised in the Sheriff Court, Kilmarnock, last month, by a lodging-house keeper against the Local Authority of Newmilns. Pursuer sued for £78 as compensation in respect of the destruction by the Sanitary Inspector of (1) beds and bedding in his lodging-house, (2) personal apparel belonging to the pursuer and his family, and (3) stock of goods in pursuer's broker's shop, on the occasion of an outbreak of small-pox in his lodging-house. The defence was that the defenders did not order the destruction of goods referred to under the second head, that the goods referred to under the third head were merely disinfected and not destroyed, and generally that pursuer's claim was excessive. Defenders, previous to the action, made a tender of £5, which they subsequently increased to £15. Proof was led at considerable length, and Sheriff Mackenzie issued an interlocutor giving decree for £35, with expenses.

**MUSCLE AND STRENGTH.**—In the *World's Work and Play* a physician makes some unusual statements on the folly of

training on the ordinary lines for the acquisition of great strength. He discusses the feats of Herr Lettl, who is only 5 feet 4 inches in height, and 10 stones in weight, with small bones, and comparatively small muscular development, but who can raise a weight of 1,500 lb.—“400 lb. heavier than any previous lift on record.” His theory is that such feats are far more matters of will power than of mere brute strength, and that a man may “train” all his life and never be strong or well developed. “The truth is that for each individual” (we quote the writer of the article) “there is a natural limit to the size of his muscles. Every muscular fibre in the body depends for its nutrition upon the health and activity of a nerve-cell in the brain or spinal cord. Now, a nerve-cell, unlike any other, is without the power of division. Half a century of thought will not add a single one to the number of nerve-cells with which a man was endowed at his birth. No system, therefore, can turn every man into a Sandow or a Lettl, since no system can add to the original number of the nerve-cells upon which the development of muscular tissue depends.” The writer, however, fails to satisfy us on the subject of Lettl’s strength, when he describes it as “a psychological problem which we cannot explain, though its manifestations are common.”

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## MEETINGS OF SOCIETIES.

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### GLASGOW MEDICO-CHIRURGICAL SOCIETY.

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SESSION 1904-1905.

MEETING I.—7TH OCTOBER, 1904.

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*The President, DR. DAVID NEWMAN, in the Chair.*

#### I.—CASE OF SPORADIC CRETINISM, WITH SKIAGRAM SHOWING DELAYED OSSIFICATION OF THE BONES.

BY DR. T. K. MONRO.

Agnes H., æt. 23, was admitted to the Glasgow Royal Infirmary on 9th May, 1904. She had been discovered in

an accidental way by Dr. John W. Findlay, and he kindly induced the parents to bring her into my wards.

The patient was born at Leeds in 1881. Nothing abnormal was noted at her birth, and it was only when she could neither walk nor speak, at 12 months of age, that her parents began to suspect that something was wrong. Then the tongue appeared to be too big for the mouth, and it was thought that this might be the cause of the defect of speech. Nothing was done for the child, however, and she never made any attempt to walk until 6 years old. She did not manage to walk very well, and she has shown no improvement in this respect since. She has never spoken intelligibly, although, after she had been in the ward for a time, she uttered certain inarticulate sounds which conveyed a meaning to those who were accustomed to hear them. There was no change in her appearance from the age of 6 years to the time of her admission last May. She showed no signs of intelligence beyond the fact that she could sit up in bed and feed herself with a spoon, and could recognise her friends.

She was in the Leeds Women and Children's Hospital in 1889, when it was proposed to remove a portion of the tongue. Nothing, however, was done. Her height then was 30 inches.

*Past illnesses.*—She has had the usual children's troubles, including measles, whooping-cough, and scarlet fever. Eight years ago she was severely scalded about the nates, and this, though rapid healing took place, gave rise to much scarring.

*Family history* is of no importance.

*Condition on admission.*—Patient is short and stout. The skin is thick and dry, and shows an excess of fat at parts. On either side of the neck, above the clavicle, and outside the inner edge of the sternomastoid muscle, there is a large movable soft swelling (? fatty). A similar condition is present in the soft tissues over the forehead, and on the back in the interscapular region.

The face is broad and heavy-looking. The nose is flattened, and there is almost no bridge. The lips are thick, and especially the lower lip, which is also everted owing to the length of the tongue. The tongue is thick, and is protruded some distance from the mouth. She never takes it into the mouth, unless when eating. The teeth, which were late in appearing, are small and carious.

The skull is elongated, and the sutures are still distinct. The anterior and posterior fontanelles can still be easily located. The hair is scanty and coarse, but is long, reaching down to the waist. The actual *pig-tail* measures 15 inches.

The abdomen is protuberant, and there is a small umbilical hernia which has been present since she had whooping-cough when  $2\frac{1}{2}$  years old.

The external genitals and the mammæ are not developed. The posterior part of the vulva is involved in the extensive cicatrisation which resulted from the scalding eight years ago.

The bones of both upper and lower limbs are unduly thick in proportion to their length.

The hands are short, thick, and broad. The fingers are broadened at the tips. The power of the hands and arms is good in every way.

The feet are short and thick. They are somewhat livid, and the circulation appears defective, especially when patient stands up. The feet are flat, the legs are somewhat curved, and patient does not seem inclined to stand up or walk.

Examination of the region of the thyroid reveals a strip of tissue in front of the trachea, about the thickness of a piece of coarse thread, which may represent the gland.

There is no appearance of intelligence in the face. The urine and fæces are passed in bed.

The heart, lungs, liver, and spleen are normal. The temperature on admission was normal. The pulse is of fair size and tension; rate, 96 per minute.

Measurements.	18th June (Dr. Riddell).	21st July (Dr. Anderson).
Height, . . . . .	41 inches.	42 inches.
Girth of chest, . . . . .	$24\frac{1}{2}$ "	$24\frac{1}{2}$ "
Abdomen at umbilicus, . . . . .	$24\frac{1}{2}$ "	... "
Arm—shoulder to wrist, . . . . .	$13\frac{1}{2}$ "	14 "
Fore-arm, . . . . .	$5\frac{1}{2}$ "	... "
Girth of upper arm, . . . . .	$6\frac{1}{2}$ "	$6\frac{3}{4}$ "
Girth of fore-arm, . . . . .	$6\frac{1}{2}$ "	$6\frac{3}{4}$ "
Leg—Ant. sup. spine to malleolus, . . . . .	$17\frac{3}{4}$ "	18 "
Int. condyle of knee to malleolus, . . . . .	$7\frac{1}{2}$ "	$7\frac{3}{4}$ "
Girth of thigh, . . . . .	$11\frac{1}{4}$ "	$12\frac{1}{4}$ "
Girth of calf, . . . . .	8 "	$8\frac{1}{4}$ "
Hand—Wrist to tip of midfinger, . . . . .	5 "	$5\frac{1}{4}$ "
„ Breadth, . . . . .	$2\frac{3}{4}$ "	$2\frac{3}{4}$ "
Girth of head, . . . . .	... "	$21\frac{1}{2}$ "

*Blood* (11th June, 1904).—

Hæmoglobin, . . . . .	60 per cent.
Red blood corpuscles, . . . . .	3,700,000 per c.m.
White corpuscles, . . . . .	10,000 „
Colour index, . . . . .	0.73

A specimen of urine, obtained on admission, had a specific

gravity of 1012. It was acid, and amber-coloured, and contained a faint trace of albumen, but no blood or sugar. There was no sediment.

*Treatment.*—On 12th May, treatment was begun in the form of 1 grain of thyroideum siccum three times a day, and on 16th May the dose was increased to 2 grains. The temperature immediately began to rise, and it reached 100° on the morning of the 18th May. The pulse-rate was from 96 to



Elbow-joint in cretin, æt. 23, showing epiphyses still disjoined from their shafts.

120. The dose was therefore reduced on 18th May to 1 grain thrice daily. This was followed by a fall in temperature to normal. The pulse, however, did not show a corresponding fall, but ranged from 110 to 128.

On 1st June the dose of thyroid was tried four times a day, but again a rise in temperature was noticed. On 3rd June the temperature reached 99.2°. The dose of thyroid was again reduced to 1 grain thrice daily, and the temperature

again fell to normal. The pulse varied from 88 to 128. As the temperature now remained normal or subnormal, the dose of thyroid was, on 11th June, increased to 7 grains in two days, and this was found to be the maximum amount which patient could take without any marked effect on the temperature or pulse.

*Result of treatment* (27th June, 1904).—Patient's appearance is greatly improved. She looks more intelligent, and the heavy, dull aspect of the face is not now seen. The tongue is kept within the mouth nearly all day, and should it be protruded it is only kept out for a very short time. There is no great difference in the swellings over the clavicle and forehead, but if anything these are slightly less. She cannot talk intelligibly, and the voice is still rough and hoarse. She shows no inclination to walk, and still passes urine and faeces in bed.

The height, which was 41 inches on 18th June, was 42 inches on 21st July, and 43 inches on 5th September, a gain of 2 inches in less than three months.

Skiagrams were prepared to show the condition of the bones in different parts of an upper and lower limb. In the case of the four inner digits of the hand, the epiphyses at the proximal ends of the proximal phalanges are found to be separated by a considerable interval from their respective shafts. The lower end of the femur is not yet united to the shaft, and the same is true of the lower end of the tibia. The delayed ossification is well shown in the accompanying skiagram of the elbow-joint (p. 123); the various epiphyses in this region ought to be united to their respective shafts by the age of from 16 to 18 years.

## II.—SPECIMENS FROM A SERIES OF THIRTEEN CASES IN WHICH THE VERMIFORM APPENDIX WAS FOUND, ON OPERATION, IN AN ABNORMAL SITE.

By DR. J. H. NICOLL.

These were arranged in two groups—

### I. *Intra-abdominal*:—

1. Perforated appendix found under lower margin of liver.
2. Concretion from appendicitic abscess in left iliac fossa.
3. Concretion from appendicitic abscess in right subphrenic region.
4. Perforated appendix and concretion from Douglas's pouch.

5. Concretion from appendicitic abscess in Douglas's pouch.
6. Perforated appendix from recto-vesical pouch.

## II. *Extra-abdominal* :—

1. Appendix found in right inguinal hernia.
2. Appendix found in left inguinal hernia.
3. Appendix from case of inguinal hernia of cæcum.
4. Appendix and concretion, also retained testis, all removed from an appendicitic abscess in right inguinal canal.
5. Appendix from right femoral hernia.
6. Appendix and hernial sac from an appendicitic abscess in right femoral hernia.
7. Concretion from appendicitic abscess in umbilical hernia.

## III.—CALCULI REMOVED BY OPERATION.

By DR. J. H. NICOLL.

These included the following :—

I. Series of three *salivary calculi* selected as illustrative of the usual sites :—(1) Under buccal mucous membrane, and (2) under skin of cheek, both in Stenson's duct. (3) Under mucous floor of mouth, in ducts of Rivini or Wharton's duct.

II. *Intestinal calculi*—(1) Concretion of lime and magnesia successfully removed by enterotomy for intestinal obstruction. (2) Concretion of bismuth, which caused intestinal obstruction, successfully treated by enterotomy and entero-anastomosis.

III. *Pancreatic calculi*, successfully removed from pancreatic duct, in a case operated on for pancreatic cyst.

IV. Series of eight cases of *gall-stones*, successfully removed by operation, selected as illustrative of (a) the varieties and sites of gall-stones ; (b) the operations commonly performed for their removal—

1. Large solitary gall-stone—cholecystotomy—with drainage.
2. Large solitary gall-stone—cholecystotomy—with primary suture of gall-bladder—"ideal cholecystotomy."
3. Small multiple gall-stones—cholecystotomy.
4. Larger multiple gall-stones—cholecystotomy.
5. Fragments of gall-stone impacted in cystic duct, and removed by choledolithotomy.
6. Gall-stone impacted in common duct—choledochotomy—with suture of duct.
7. Gall-stone impacted in common duct—choledochotomy—without suture.



8. Gall-stone which caused intestinal obstruction by impaction in small intestine, removed by enterotomy.

V. Series of six *renal calculi*, selected mainly as illustrative of the success, in certain cases, of nephrolithotomy, as contrasted with nephrectomy in cases of kidney-stone.

VI. Series of six *ureteral calculi*, selected as illustrative of (a) the difficulty of diagnosis, and (b) the advantages of the extraperitoneal route in removing certain stones impacted in the ureter.

VII. Series of six *vesical calculi*, removed by suprapubic lithotomy—uric acid, oxalate of lime, and phosphatic.

VIII. Stones successfully removed at *extreme ages* :—

1. *Lithotomy*.—(a) Stone from infant of 1 month; (b) stone from man of 85; (c) stones from man of 84.

2. *Lithotrity*.—(a) *Débris* of stone, removed by litholapaxy in man of 84; (b) *débris* of stone in boy of 2.

IX. Series of six *vesical calculi*, selected as illustrative of the range of *lithotrity* in removing stones of high density and considerable bulk.

X. Series of four *vesical calculi*, illustrative of *lithotrity* performed (a) under local anæsthesia (cocaine and eucaine with adrenalin), and (b) without either general or local anæsthetic.

XI. Series of three *encysted vesical calculi*, removed by suprapubic lithotomy.

XII. Series of six "*prostatic*" calculi, found in the prostate itself, or in diverticula connected with it, in six cases in which *prostatectomy* was performed.

XIII. Series of three *urethral calculi*, selected as illustrative of the three usual methods of dealing with impacted urethral calculus—(a) Extraction by meatus; (b) external urethrotomy; (c) pushing back into bladder and crushing.

(The report of this Meeting will be continued in our next issue.)

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GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1904-1905.

MEETING I (*continued*).—10TH OCTOBER, 1904.

*The President, PROF. ROBERT MUIR, in the Chair.*

IV.—CANCEROUS TUMOUR OF THE THYROID GLAND WHICH HAD  
PENETRATED THE TRACHEA.

BY DR. WALKER DOWNIE AND DR. J. H. TEACHER.

*Clinical history by Dr. Walker Downie.*—The larynx and trachea now shown are from a man, a stonemason, aged 61, whom I saw in consultation with Dr. Thomas Orr at Balforn, by whom the following notes are supplied:—

The patient had been complaining for six weeks only, although during last winter he had had a cough which disappeared during the summer months. From youth he had been a vocalist, and the first indication of there being anything amiss was felt by him while singing in church. He felt his voice suddenly become harsh, he could not take high notes, and he was breathless. From this time on the breathlessness increased.

On 12th September, Dr. Orr was first called, when he found the patient suffering from great dyspnœa—both inspiratory and expiratory—and inability to lie down. He had a constant hacking cough, and occasionally he expectorated a considerable quantity of yellow stringy mucus, which was often streaked with blood. Some dysphagia was present, but pain was complained of only when the cough had been severe.

The voice was clear, but weak, and much talking exhausted him. His lips were livid, his skin was very moist, and his pulse was 120.

The patient had rapidly lost flesh and strength, and after the first two weeks had to take to his bed. He also suffered from anorexia and flatulence, with a coated tongue.

When I saw him on 19th September, he was pale and weak, with a quick soft pulse and rapid noisy respirations, and his lips were slightly cyanosed. There was every sign of serious obstruction to the passage of air through the windpipe.

His voice was clear, but his sentences were short and broken

from want of breath. On examining the neck, the thyroid structures appeared to be thicker, firmer, and less movable than normal, but no localised tumour could be felt, though there was an enlarged gland behind and below the posterior border of the left thyroid cartilage.

Laryngoscopic examination revealed a general hyperæmia of the laryngeal mucosa, also that both cords were, apart from this, normal, and their movements, both of abduction and adduction, were unaffected.

Immediately below the cords there was seen a prominent irregular growth. The main portion appeared to spring from the left lateral wall of the larynx, about the level of the cricoid cartilage, where it occupied at least two-thirds of the opening of the trachea.

I looked upon the condition as an epithelioma of the sub-glottic region of the larynx extending downwards into the trachea—a case in which, after tracheotomy had been performed, it might be possible to deal directly with the growth by an external operation. The patient, however, died of heart failure immediately after tracheotomy.

*Pathological report by Dr. Teacher.*—The *post-mortem* examination was made by Professor Muir, to whom I am indebted for permission to use the specimen. The following facts are taken from his notes in the Journal of the Pathology Department of the Western Infirmary, P.M. No. 6945:—

The body was rather spare, but fairly well nourished on the whole. There was no jaundice or dropsy. The thyroid showed distinct enlargement, recognisable externally. The left lobe measured  $2\frac{3}{4}$  inches in length,  $1\frac{1}{2}$  inch in width, and about the same in thickness. It has pretty much its normal configuration, and is comparatively smooth on the surface. On section, practically no thyroid tissue can be distinguished, its place being taken by firm tumour of almost uniform whitish appearance. The isthmus is thickened and almost replaced by similar growth.

The right lobe is rather more enlarged than the left. In the lower half there are two or three cysts which contain dark brown fluid, and there is some calcareous deposit in their walls. The tumour tissue infiltrates the right lobe to the inner side and inferiorly for about three quarters of an inch. The rest of the lobe appears to be normal thyroid tissue. The larynx is practically normal. The upper part of the trachea is the seat of extensive cancerous infiltration. This commences immediately below the vocal cords, and extends

downwards for fully  $2\frac{1}{2}$  inches. The mucous membrane is involved in its whole circumference, and about equally on the various aspects. The growth in the upper part, though nodular, is practically continuous, whilst below there are discrete nodules of various sizes. The lumen has been much encroached upon—in fact, about an inch below the cords it has been almost completely obliterated. At this level, the growth is partly softened and ulcerated; elsewhere it is fairly firm. The left lobe of the thyroid is firmly adherent to the wall of the trachea, and the latter seems to be fully infiltrated in its whole thickness, the appearance being as if the tumour had grown from the thyroid through the tracheal wall.

The left recurrent laryngeal nerve runs into the tumour tissue which unites the left lobe of the thyroid to the trachea; the right had not been involved.

The lymphatic glands on each side of the trachea show secondary infiltration, though this has not reached a high degree. They are of a grey colour from containing stone dust. The glands lower in the neck are more enlarged; this is partly due to the stone dust absorbed from the lungs, but also to secondary growth of tumour.

The oesophagus was somewhat firmly adherent to the tumour, but only the external fibrous coat was involved.

In the upper part of the right lobe of the liver, there were two congested areas, measuring about three-quarters of an inch across, and in the centre of each was a pale nodule, rather irregular in outline; these were apparently secondary growths. Microscopic examination confirmed this impression as to the nature of these nodules. No other secondary growths were discovered; the skeleton was not specially examined for their presence.

The trachea and thyroid were carefully dissected and preserved for the museum.

Microscopically, the tumour presents rather curious characters. The greater part of the tumour in the thyroid consists of moderately fine processes of cells of epithelial character occupying the interstices of a connective tissue stroma, which, for the most part, is very firm, fibrous, and containing few cellular elements. Here and there islets of thyroid tissue appear. These consist of a few of the characteristic acini, which usually show signs of approaching disintegration. They are embedded in a richly cellular and vascular connective tissue, in the outer parts of which appear fine processes of the invading tumour (Fig. 1, p. 130).

Within the trachea the growth presents somewhat different

characters—the connective tissue stroma is little developed, appearing for the most part only as fine strands of rather cellular tissue, in which the blood-vessels run. The epithelial part of the tumour forms, as in the thyroid, fine processes, and occasionally masses of considerable size; it has a less solid structure, and the appearance of having been growing very rapidly. In places the tumour is covered by the remains of the mucous membrane, in other places it projects naked into the trachea.

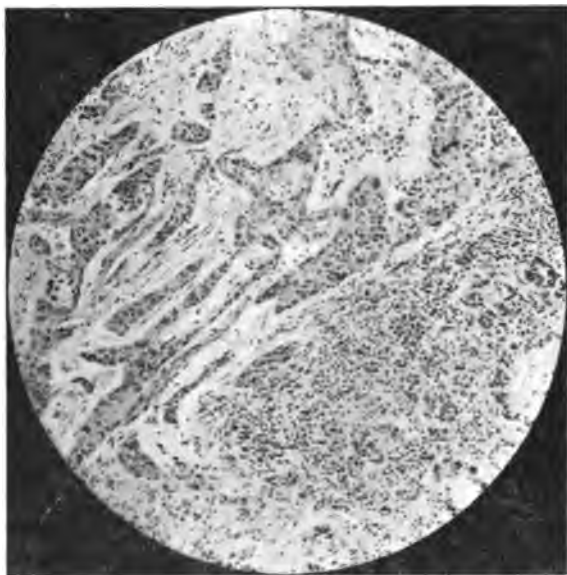


FIG. 1.

Photomicrograph of a section of the primary tumour. At the extreme margin of the very cellular part of the picture are seen portions of thyroid acini. ( $\times 100$ .)

In the older parts of the tumour the arrangement of epithelial processes and stroma is that of a hard carcinoma, but the character of the cells suggests an origin from some tissue other than glandular epithelium. Especially is this the case in the intra-tracheal growth, where the effects of pressure are absent. Nowhere do the tumour processes present any trace of a glandular arrangement. The cells are of rather large size, with opaque protoplasm which stains somewhat deeply with eosin, and large vesicular nuclei containing one or more nucleoli. The cells, as a rule, are mononucleated;

karyokinetic figures, some regular, others irregular, are numerous. The cells vary greatly in shape, from long spindles with long oval nuclei in the compressed parts, and where the growth is infiltrating the remains of thyroid or other normal tissues, to plump polygonal or round cells with spherical nuclei in the larger uncompressed masses (Fig. 2).

In their size and opacity the cells resemble those of a squamous epithelioma rather than those of a carcinoma; the

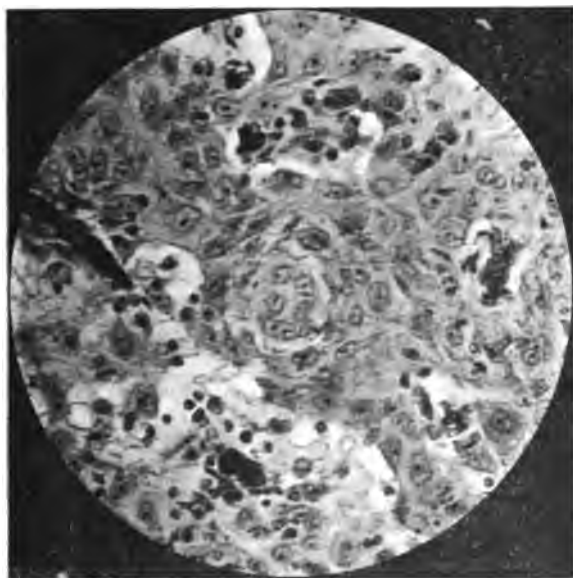


FIG. 2.

**Photomicrograph of section of the intra-tracheal growth, showing in the centre a mass of cells with concentric arrangement. The paler areas are remains of blood-vessels containing degenerated blood; the very dark streak is a capillary full of normal blood, deeply stained. ( $\times 300$ .)**

sections were compared with sections of a typical soft carcinoma of the thyroid, which retained some traces of glandular arrangement in its cell masses, and the difference was very marked. On the other hand, typical laminated capsules are not present; but here and there in the tracheal growth a concentric arrangement of certain cell processes was noticed, which suggests these bodies.

Between the large polygonal cells there are fine spaces,

which heighten the resemblance to stratified squamous epithelium, but they have the appearance of a simple separation of the cells, possibly *post-mortem*, rather than natural intercellular spaces. Nowhere could intercellular bridges, like those of the prickly layer of stratified squamous epithelium, be found, whereas they are to be found in epitheliomata both of the skin and of mucous membrane.

The relations of the tumour cells to the blood-vessels are interesting. Frequently small vessels are seen sheathed with tumour cells. The wall of the vessel may be little affected, or it may be partly destroyed by invasion by the tumour cells. Again, tumour masses are frequently to be seen which are hollowed out into irregular rounded cavities filled with blood. This commonly is more or less degenerated or coagulated, the red corpuscles reduced to shadows, and leucocytes of all sorts present in great abundance, eosinophiles being sometimes pretty numerous. Large round cells, which are clearly detached tumour cells, are frequently present in these blood spaces. Some of the spaces show the remains of endothelium; in others, the blood is in direct contact with the tumour cells. The spaces appear to originate as dilatations of the eroded blood-vessels; when the condition is advanced they are practically small hæmorrhages. They do not suggest an origin of the tumour from endothelium. Telangiectatic cancer of the thyroid has been described by Von Straaten, and carcinoma of the thyroid with microscopic penetration of blood-vessels by Hahne, descriptions which would correspond to the appearances here presented. In the latter case, metastatic growths had formed in the lungs by blood-stream infection; in the present case, that had not occurred. Probably there was little or no circulation in the spaces which contained free tumour cells.

Malignant tumours of the thyroid are exceedingly rare in this country. Bland-Sutton mentions that in his experience of twenty years he had met with only three cases. According to Kaufmann, of Basle, they are rare; but in goitrous districts—as, for instance, the neighbouring parts of Switzerland—they are relatively common. It is indeed agreed that thyroids which are diseased are more liable to be attacked than those which are healthy.

The literature of the subject is very scattered, and much of it is rather inaccessible; but there is an excellent review of it up to 1901. by Thorel in *Lubarsch und Ostertag's Ergebnisse*, and the essential facts are given by Bland-Sutton and Kaufmann.

The following varieties of tumour have been described:—Carcinoma, both scirrhus and encephaloid, malignant adenoma, papilligerous cystic tumours, squamous celled epithelioma (very rare), various forms of sarcomata and endotheliomata. All, except the scirrhus carcinomata, form large tumours, which are usually nodulated, but preserving more or less the shape of the gland. Clinically they differ from the simple goitre in rapidity of growth—a tendency of the rapid increase to be unilateral and in the consequences of the malignant activity. The most important of these complications which are recognised clinically are (1) invasion of the trachea, (2) involvement of the recurrent laryngeal nerve producing unilateral or bilateral paralysis, (3) infection of adjacent lymphatic glands, and (4) the formation of metastatic tumours elsewhere.

One form of tumour—the malignant adenoma or adenocarcinoma—closely resembles the normal thyroid in structure, but shows malignancy in forming metastatic growths, which are most common in the lymphatic glands, lungs, and bones, and reproduce the structure of the normal thyroid. In spite of this tendency to metastasis, it is a comparatively benign growth, growing slowly, and excision of the metastases, it is said, often results favourably. In several cases the tumours of bone have first attracted attention, and have been subjected to operation, after which the true nature of the disease was revealed by microscopic examination. Von Eiselsberg has described a case in which one of these tumours was proved to have exercised the function of the thyroid. After extirpation of a tumour of the thyroid itself characteristic symptoms of want of the gland resulted, which diminished on the appearance of a metastatic growth in the sternum, and developed again on its removal. There are two examples of the malignant adenoma in Glasgow—one being in the museum of the Western Infirmary (described by the late Professor Coats), the other in the Hunterian Museum.

The soft carcinomata are also represented by a specimen in each of these collections, and in the Western Infirmary there is also a sarcoma. In the last three cases the trachea had been perforated, and the patients died from the resulting obstruction to respiration.

The scirrhus carcinomata, unlike the preceding, tend to be small growths. The thyroid is not markedly enlarged (it may even be reduced in size), and its shape is not altered. The primary growth commonly escapes recognition, as it did in the present case. The most characteristic features besides the



perforation of the trachea are stony hardness and immobility of the thyroid, and involvement of the recurrent laryngeal nerve. It is remarkable that in the present case the left recurrent laryngeal nerve runs into the tumour tissue which is growing from the deep surface of the left lobe of the thyroid into the tracheal wall, yet there was no paralysis.

In view of the peculiar structure of the tumour, it appears unlikely that it originated from the thyroid gland tissue. In its destructive effects on that tissue it does indeed present the characters of an invading alien growth, rather than one developing by transformation of the gland tissue. Although not by any means a typical squamous epithelial tumour, it presents sufficient likeness to these growths to suggest that it arose from stratified squamous epithelium. Normally there is no tissue of this kind in the adult thyroid; the thyroglossal duct (when present) is lined in its lower part by columnar ciliated epithelium. The thyroid is developed from three buds of hypoblast, viz., (1) a median process from the pharynx which forms the isthmus, pyramid, and duct (when present) and part of either lateral lobe, and buds from each fourth branchial cleft, which form the rest of the lateral lobes. The primitive type of epithelium is cubical ciliated, but it is an epithelium which in this part of the body gives rise to such varied tissues as the columnar ciliated epithelium of the trachea, the stratified squamous of the tongue, larynx and pharynx, the glandular acini of the thyroid, and the concentric corpuscles of Hassall in the thymus. There is, therefore, no theoretical difficulty in regarding the tumour as the product of an epithelial rest in the left lobe of the thyroid, which developed into tumour cells resembling the second of the above-mentioned forms.

#### REFERENCES.

- Bland-Sutton, J., *Tumours, Innocent and Malignant*, new edition, 1901, p. 285.  
 Coats, *Trans. Path. Soc. Lond.*, vol. xxxviii, p. 399.  
 V. Eiselsberg, see Thorel.  
 Halne, see Thorel.  
 Kaufmann, *Lehrbuch der Specielle Pathologische Anatomie*, second edition, Berlin, 1901.  
 Von Straaten, see Thorel.  
 Thorel, Ch., in *Lubarsch u. Ostertag's Ergebnisse der Allgemeinen Pathologie*, &c., seventh year, 1900-1901, p. 206.  
 Wölfer, Dr. A., "Ueber die Entwicklung und den Bau des Kropfes," in *Langenbeck's Archiv f. Klinische Chirurgie*, 1883, vol. xxix, pp. 1, 754; this is the most complete paper on the subject.

The case was discussed by *Professor Muir*, with reference particularly to the source of the growth, which appeared to be not a tumour of thyroid gland tissue, but an epithelioma of the squamous type; by *Dr. Rutherford*, who referred to a case of carcinoma of the thyroid which he had under observation; and by *Dr. Freeland Fergus*, who had also observed a case of cancer of the thyroid in Glasgow.

V.—LARGE HYDRONEPHROSIS IN A BOY, AGED 7 YEARS.

BY DR. HENRY RUTHERFURD.

Owing to an accident this specimen had been destroyed, but, by permission of the meeting, Dr. Rutherford gave an account of the case.

Thomas G., aged 7, was admitted to Ward 25 of the Glasgow Royal Infirmary on 1st August, 1904, with great distension of the abdomen, which had come on during the last year. The distension was not symmetrical, being more pronounced on the right side, but was such as to suggest ascites more or less encysted. The greatest girth was  $4\frac{1}{2}$  inches above the umbilicus, 31 inches; at the umbilicus, 28 inches. Dulness was present all over, except in the epigastric, left hypochondriac, and left iliac regions, where there was a tympanitic note, and where the abdominal wall was comparatively flaccid. The whole lower abdomen, but more on the right than on the left, was occupied by a tense globular swelling and the right hypochondriac region was occupied by a dull but more yielding swelling which passed backwards into the lumbar region.

Dulness and tympanicity unaltered by position. Deep pressure over the upper region of this spherical swelling on the right side finds apparently solid masses.

Tongue clean. No difficulty in getting the bowels to move.

Urine—specific gravity, 1020; acid; a trace of albumen; no casts.

*8th August.*—Under chloroform, followed by A.C.E., an incision was made to the left of the umbilicus, about 3 inches long. Immediately on getting through the attenuated belly wall, a smooth cyst-like fluctuant swelling was come upon. This was punctured with a trocar and cannula, and there ran off a watery fluid, rather muddy and red, the redness becoming more pronounced towards the close of the tapping. In all, 200 oz. was collected. As the tumour subsided, the caput cæcum and appendix came into view, the puncture being to the right of these. The wound in the peritoneum was

enlarged upwards and downwards, and the separation of the hydronephrotic sac (as it was now assumed to be) was proceeded with. Over the front it was for some distance difficult to keep close to the cyst wall, and numerous veins were tied and divided. One large vein, apparently the renal, was seen. The renal artery was not recognised.

The origin of the ureter was deeply buried in the voluminous pelvis. Their exact relation was left for further examination. The ureter presented no distension whatever below the point at which it became clear of the sac. It was tied and cut below the level of the brim of the pelvis.

The wound in the posterior peritoneum, which was no longer than that in the anterior abdominal wall (say 3 inches), was stitched, there being no oozing. The appendix, which seemed unusually long, was amputated. The abdominal wall was sutured in two layers.

Patient, who had been at times rather blanched, left the table with a fairly satisfactory pulse of 84. For the first twenty-four hours he had three-hourly enemata of 6 oz. of saline solution.

On the morning after the operation, he was found crying from the pain of a distended bladder. The catheter had to be used once.

A few days after the operation the urine had a specific gravity of 1022. There was no albumen.

Patient was sent home well on 5th September.

The main part of the tumour here was formed of the distended pelvis. The masses which had been felt above this, and which had been regarded as possibly fæcal or neoplastic, were, it appeared, the sacculations of the kidney atrophied almost to the thinness of the main cyst.

#### VI.—CARD SPECIMENS.

BY MR. GEO. H. EDINGTON.

1. *Ruptured kidney, removed by operation.*—The specimen was from a man, aged 37, who was admitted to the Western Infirmary, Ward XIX, on 3rd June, 1904. While at his work a bar of iron struck him below the costal margin on the right side in front; the bar passed across the abdominal cavity and projected through a wound in the lumbar region, from which it had been extracted before admission to hospital. In the absence of Sir Hector Cameron I saw the patient. He was suffering from shock, and was cold, pale, and sweating. There

was a ragged, transverse wound, 2 inches in length, below the costal margin and right lobe of the liver. Below the liver there was considerable swelling, dull to percussion. Urine, drawn off by catheter, was mostly blood. The anterior wound was enlarged downwards, and the under surface of the right lobe of the liver was found badly lacerated and bleeding; the injury was to the outer side of the gall-bladder region. The region was packed with gauze, and the hæmorrhage checked.

The posterior parietal peritoneum over the right kidney was raised up by a collection of blood. It was incised, and free bleeding ensued. The kidney was found broken in two pieces by a transverse rupture a little above its middle. The pedicle was ligated in two parts (upper and lower), and the organ removed. The cavity was packed. He did not rally, and died five hours later.

2. *Iliac intussusception (gangrenous) removed by operation.*—H. M'G., male, aged 1½ year, was admitted to the Royal Hospital for Sick Children on 21st August, 1904, with a history of vomiting and abdominal pain of two and a half days' duration.

With the exception of measles at the age of 9 months, he had always enjoyed good health, and he was running about up till the night before the onset of the present illness. On the morning of 19th August, while in bed, he was suddenly seized with pain in the belly; this caused him to cry out and kick his legs about. There was also vomiting, and, while this occurred independently of his taking food, it was noticed that anything which he swallowed was immediately vomited. On the night of the 20th the vomited matter was brown in colour and had a fæcal odour. There had been no movement of the bowels since the morning of the 18th, and an enema administered after admission to hospital was followed by a discharge of blood. There had been no discharge of mucus, nor had tenesmus been observed. I saw the patient in Mr. Parry's absence.

The child presented a well-nourished appearance, but the "facies Hippocratica" was marked. There was no distension of the abdomen, but above and to the inner side of the right iliac fossa was a rounded tumour of the size of a large turkey-egg. The upper end of the tumour was just above the level of the umbilicus, and the mass was freely movable. Nothing abnormal was felt on rectal examination, but the finger, on being withdrawn, was found to be soiled with blood and slime. A diagnosis of intussusception was made.

*Operation.*—An hour and a half after admission, and sixty

hours after the onset of the symptoms, the abdomen was opened. An incision, 4 inches in length, with mid-point slightly below the level of the umbilicus, was made over the inner part of the right rectus, and the muscle fibres were separated; the peritoneal incision was 2 inches in length. On opening the peritoneum there was no tendency to prolapse of bowel. The tumour, which proved to be an iliac intussusception, was brought out of the wound. The intussusciens presented a Meckel's diverticulum about 4 inches from its upper end; the diverticulum was about 1 inch in length and of about equal breadth. The intussusceptum was easily felt within the sheath; it was about 8 inches long, and freely movable, but could not be reduced. Just beyond the lower end of the intussusceptum the sheathing bowel presented, close to the mesenteric attachment, a slough of about the size of a threepenny piece. During manipulation a rupture of the sheath occurred, 1 inch from its upper end, at a spot thinned by sloughing. There was marked enlargement of the mesenteric glands, and the peritoneum of the upper part of the intussusciens was flecked in a manner suggestive of tuberculosis. The mass was excised between clamps; end-to-end suture was performed. The mesentery was ligated by interlocking loops of catgut previous to being divided. After the edges of the gap had been brought together by the approximation of the ends of the bowel, they were sutured on both sides of the mesentery. The outer layer of bowel measured  $12\frac{1}{2}$  inches in length, exclusive of the stump of the entering bowel (1 inch). The patient did not rally, but died six hours later.

The parts were examined after death. The intestinal coils in the neighbourhood of the seat of operation were adherent to one another. There had been neither hæmorrhage nor leakage. The line of suture in the gut was 17 inches above the ileo-cæcal valve. The distal portion of the gut was slightly collapsed—the proximal considerably distended. The line of union was watertight, even under pressure.

The intussusception was opened after hardening; the intussuscepted bowel was found to be gangrenous. Dr. Teacher reported that the mesenteric glands were not tuberculous, but were the seat of simple inflammation.

I am unable to say what was the cause of the intussusception. One feature which was noted at the operation was the absence of marked distension of the gut, and consequently there was no tendency to prolapse.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

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SESSION 1904-1905.

MEETING I.—26TH OCTOBER, 1904.

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*The President, DR. J. K. KELLY, in the Chair.*

I.—SPECIMEN.

By DR. W. RITCHIE.

Dr. Ritchie showed a pedunculated fibroid tumour of the labium majus.

II.—PRESIDENTIAL ADDRESS ON EXTRA-UTERINE PREGNANCY,  
FOLLOWED BY A LANTERN DEMONSTRATION ILLUSTRATING  
THE SUBJECT.

By DR. J. K. KELLY.

Dr. Kelly's paper will be found as an original article in our issue for January, 1905, at p. 16.

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MEETING II.—23RD NOVEMBER, 1904.

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*The President, DR. J. K. KELLY, in the Chair.*

I.—SPECIMENS.

A. By DR. JOHN EDGAR.

*Hæmatocele and sac removed from the left hypochondrium.*  
—Five weeks previous to admission to hospital, the patient was delivered of an eight months' child. She complained of great pain during labour. An incision through the left linea semilunaris revealed a mass among the intestines adherent to the anterior abdominal wall. Fearing that the mass might contain pus, Dr. Edgar made another incision directly over it,

and shelled out from amongst the intestines a hæmatocele sac filled with clot. He thought a likely explanation was that, during labour, some veins of the pampiniform plexus had ruptured, and that the uterus, receding after labour, had left the blood behind it.

B. BY DR. J. K. KELLY.

1. Myoma of the anterior uterine wall undergoing myxomatous degeneration.
2. Tumour composed of several myomatous nodules occupying various portions of the uterine wall.
3. Parovarian cyst with torsion of the pedicle.
4. Tubo-ovarian cyst filled with pus. Tubercles were found in the wall of the tube.

C. BY DR. G. BALFOUR MARSHALL.

*Eight mucous polypi removed from one cervix.*—Mrs. A., aged 50, sterile, four years past menopause, had complained for some years of pelvic discomfort, bearing down feeling, and leucorrhœa. There had been a very occasional trace of blood seen since the climacteric. For several months she had noticed a reddish, soft structure protruding at the ostium vaginæ, which she regarded as a “falling of the womb.” On examination, the vagina seemed full of mucous polypi hanging from the cervix, eight being removed at operation. One, presenting at the ostium vaginæ, was the size of small walnut, containing small cysts, and had a long, broad pedicle attached to the anterior lip of the os uteri. Four were about bean size, and lay in the dilated cervical canal. A sixth was the size of a large filbert nut, and contained visible cysts; while the seventh and eighth polypi were about an inch and a half long by half an inch thick.

## II.—EPILEPTIFORM ATTACKS COMPLICATING DOUBLE OVARIAN TUMOUR: REMOVAL OF GROWTHS FOLLOWED BY CESSATION OF ATTACKS.

BY DR. A. W. RUSSELL.

Dr. Russell's paper will be found as an original article at p. 99.

## III.—NOTES ON A CASE OF UTERUS DIDELPHYS WITH SEPTATE VAGINA.

BY DR. DONALD DUFF.

Dr. Duff's paper appears as an original article at p. 104.

*Dr. Jardine* said that he had seen several cases of double uteri in connection with pregnancy. One case he had reported to the Society a short time ago. In that case, the uterus and vagina had been double. He had discovered that the uterus was double and one horn pregnant at the third month, but he had only noticed one vagina. When the patient was in labour he had discovered the second vagina, which had never been penetrated, and the curious thing was that it was the vagina with which the pregnant horn was connected. It might have been a case of transmigration of the spermatozoa, but he thought it more probable that they had made their way up from the vulva. After delivery, he had removed the vaginal septum and also the decidua from the non-pregnant horn. He had examined the patient some months later, and had passed two sounds, the nodules of which crossed in the vagina. He had seen at least two other cases with partial separation of the horns. One of the latter patients had a badly contracted pelvis, and if she should again become pregnant he hoped to do Cæsarean section on her. He believed that all the so-called cases of superfœtation were really cases of double uteri, where the two horns had been impregnated at different times.

*Dr. A. W. Russell* said that he had seen several cases of double vagina and double uterus, and he had had two cases under his own care and had operated on both of them. The first was a young married lady who, in complaining of dyspareunia, was found to have a thick and complete vaginal septum. The uterus itself was found to be also completely divided by a septum. The vaginal septum was removed, and the patient soon became pregnant. About the middle of the pregnancy, after some weeks of considerable discomfort, the patient felt as if something gave way, and there was slight hæmorrhage. The after-history seemed to justify the presumption that this indicated the rupture of the thinned-out septum, as ever afterwards the patient felt comfortable and had a normal confinement at full time. The placenta and membranes were carefully inspected, but threw no further light on the case. The other case was a young unmarried lady, of neurotic temperament, who had dysmenorrhœa. On



hearing of this abnormality, also a complete continuous median septum of uterus and vagina, she decided to have the septum removed, and in this case the cervix was also dilated and the septum was slit up, as she had the prospect of marriage. The only thing to be further noted in this case is that ever afterwards the patient persisted in saying that there was prolapse of the uterus, and when at last examined in the erect posture the uterus was felt to lie low in the pelvis. This suggests the possibility of abnormal weakness of the lateral supporting structures, but too much stress should not be laid on this, as the patient was markedly neurotic.

*Dr. Kelly* said that he could not remember having noted in the course of reading that the ureters had ever been observed passing between horns of a bicornuate uterus.

IV.—VULCANITE RING PESSARY WORN FOR FIFTEEN YEARS AND CAUSING SYMPTOMS SIMULATING MALIGNANCY IN A WOMAN, AGED 60.

By DR. G. BALFOUR MARSHALL.

*Dr. Marshall's* paper will be found as an original article at p. 102.

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## REVIEWS.

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*Practical Text-Book of Midwifery for Nurses.* By ROBERT JARDINE, M.D. Second Edition. With 39 Illustrations. Edinburgh: William F. Clay. 1903.

THIS is decidedly one of the best text-books on midwifery for nurses yet published. So far as the general arrangement of the subject-matter is concerned, it does not differ from others. Its value lies more in the soundness of its advice to nurses and midwives, and in the excellence of the practical hints which are found on nearly every page. Another feature which commends it is the simplicity and clearness of its language.

Special emphasis is laid upon the aseptic management of labour, and throughout the volume the midwife is carefully and clearly directed how to recognise when she may undertake to treat a patient herself, and when she must send for

medical assistance. In the section on "Puerperal Sepsis," however, Dr. Jardine has not been so watchful in this respect as usual. On page 221 he says, "If sapræmia occurs, a purgative should be administered. . . . Copious hot vaginal douches should be administered twice daily. If this does not bring the temperature down, the nurse must seek assistance." Why not sooner?

The illustrations on pages 22 and 48, which have now done duty for so many years, might well be replaced in a future edition by others truer to nature.

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*A Manual of Ambulance.* By J. SCOTT RIDDELL, C.M., M.B., M.A. Fifth Edition. London: Charles Griffin & Co. 1904.

DESPITE the plethora of publications, official and non-official, on first-aid and ambulance work, this little volume maintains its popularity, and a fifth edition has been issued. This is doubtless due to the clear, concise, and practical method which the author has adopted in dealing with the subject, and to the wealth of useful illustrations which are to be found throughout the book. There is a chapter on the proper organisation and management of ambulance classes, and a series of sample examination papers which have been set from time to time. The chapter on electrical accidents is an addition rendered advisable by the great increase in the use of electric apparatus of all kinds during the past few years, and is of practical value.

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*Charles White, F.R.S.: A Great Provincial Surgeon and Obstetrician of the Eighteenth Century.* By CHARLES J. CULLINGWORTH, M.D., F.R.C.P. London: Henry J. Glaisher. 1904.

THIS short and graphic account of the life and character of a most interesting personality was given as an address before the Medical Society of Manchester, in October, 1903. Charles White was, undoubtedly, for many years, head of his profession in the North of England. He was a man of great force of character, immense energy, and remarkable powers of endurance.

At the inception of the Manchester Infirmary in 1752 he was appointed chief surgeon, and this post he retained for

thirty-eight years. But it is as an obstetrician that he is perhaps best remembered. Long before Sir James Simpson's classical essay on puerperal fever, White drew attention to the close analogy between this fever and that which followed surgical operations. The treatment recommended by him was far in advance of his time. Indeed, his celebrated work on the *Management of Pregnant and Lying-in Women* may even to-day be read with advantage.

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*Text-Book of Anatomy.* Edited by D. J. CUNNINGHAM, F.R.S.  
Edinburgh and London: Young J. Pentland. 1902.

THE time that has elapsed since we received this work has enabled us to ascertain, to some extent, its actual merit as a student's text-book. There can be no two opinions as to its outstanding worth as an authoritatively written and finely-illustrated volume, and one purpose of the book, as shown in the dedication, is interesting and laudable. Sir Wm. Turner, in the midst of many active duties, had never taken occasion to compile a compendious text-book of anatomy, and it is as a monument to his great influence as a teacher and "chief" that ten of his former pupils, now occupying important Anatomy Chairs in the United Kingdom, send forth this volume under the editorship of Professor Cunningham, Sir William's direct successor in the Chair of Anatomy in the University of Edinburgh, and as a monument of accurate detailed information the work is worthy of its dedication. Each section is full and satisfactory in itself, and considerable skill is shown in interlocking and condensing various parts.

The whole volume, however, extends to considerably over 1,200 large and closely printed pages, surely a much larger mass of anatomical information than the student should be called on to face in the midst of the crowded medical curriculum. For the graduate, or advanced student, who wishes a fuller view of the details and problems of anatomy than most of the current text-books give, the work can be heartily commended; but it must at the same time be stated that it comprises all too unwieldy a mass of facts for an ordinary medical undergraduate.

Here and there throughout the work there is evidence of expert compression and restraint, but in the end Peter has been robbed only to pay Paul, and the unique opportunity of publishing a coherent and concise text-book, which might have

been enjoyed by these ten independent authorities in mutual co-operation, has been lost.

Special praise is due to the illustrations, which number over 1,200, many of them simple line diagrams and many of them fine drawings, beautifully engraved, bearing evident trace of very careful supervision. Exception may be taken to the anomalous shading of the meningeal grooves in the drawing of the parietal bone, and in the *norma frontalis* at page 145. It would have been better to show the normal articulation between the superior maxillary and frontal bones.

The closing section of the book on surface and surgical anatomy is the work of Dr. Harold Stiles, and, though *very* concentrated and not quite faultless, is specially good. It is very evidently the work of one of wide practical experience, who has kept well abreast of modern anatomical investigations, and will prove particularly useful to senior students and practitioners.

With this, we notice also the Third Edition of Cunningham's *Manual of Practical Anatomy* (Pentland's Student Manuals, 1903), which owes the greater part of its novelty to many new illustrations, several of which have been taken from the foregoing work. An attempt has been made to render the text more concise, but it seems to us to be still far in excess of what is desirable in any book professing to be a *practical* manual. In fact, the addition of a complete series of "painted bone" illustrations brings the work more than ever within the pale of *systematic* text-books. This edition may, no doubt, be appreciated in one way by the student of practical anatomy, but we fear he is apt to suffer from some occasional "inability to see the wood for the trees" in using so elaborate a manual in his dissecting-room work.

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*Elements of General Radio-Therapy.* By DR. LEOPOLD FREUND, of Vienna. Translated by G. H. LANCASHIRE, M.R.C.S.Eng. London: Rebman, Limited. 1904.

THIS volume, written by one of the pioneers of radio-therapy, is worthy of a place in every medical library. The author takes it for granted that busy practitioners have no time to study, or have forgotten the principles of electricity, the knowledge of which is essential to the thorough understanding of radio-therapy; and he has, therefore, devoted the first part of the volume to the elements of electricity—a very wise

and, we think, necessary procedure for the success of the book.

Another part deals in an able and clear manner with the treatment of disease by "high-frequency currents," and treats of the physiological effects and therapeutic value of this over-rated remedy, and gives it its right position. The third part deals with  $x$ -rays, their installation, and the indications for their use, especially in skin diseases.

The writer then entertains the reader to a well-written article on Becquerel's rays, and gives up the latter part of the work to the study of physics (light, heat, &c.).

Dr. Freund is to be complimented on his work. He shows his good sense in giving and taking no praise, but simply giving bare facts, bad and good. The book is the best of its kind on the subject, and goes into every detail in an interesting manner. The parts of most value and interest, apart from dermatology, are those on sunlight treatment, sun baths, effects of light on plants, bacteria and higher organisms, and treatment by artificial light—all of which take the reader into a new and experimental region of passing interest; and we feel only one regret that a book which has entailed so much labour in its production, and treats of such a rapidly progressing and advancing subject, will on that account have a short life.

We urge those who are interested in, or non-conversant with, the subject to procure a copy of this book at the price of one guinea or 25s., and in this way to make the acquaintance of one of the best exponents of the subject.

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*Diseases of the Intestines and Peritoneum (Nothnagel's Encyclopædia of Practical Medicine).* By PROFESSOR DR. HERMANN NOTHNAGEL. Edited, with Additions, by HUMPHREY D. ROLLESTON, M.D., F.R.C.P. Authorised Translation from the German, under the Editorial Supervision of ALFRED STENGEL, M.D. London: W. B. Saunders & Co. 1904.

THE present volume will fully maintain the reputation which its predecessors have gained for the great series to which they belong. Professor Nothnagel is so highly respected as a veteran teacher that we welcome anything from his pen, and in this treatise our expectations have been more than realised. In dealing with a volume of over a thousand pages we are scarcely prepared, where so much is good, to select a few portions for special commendation, particularly as we have freely indicated

in previous notices the admirable character of this *Encyclopædia* as a whole. We may, however, state that we are impressed by the absence of bigotry in Professor Nothnagel's teaching—a feature which emerges, for instance, in connection with the question of surgical treatment in various affections of the intestine. Another important feature of the volume is the excellent work of the English editor. So far as we can recollect, none of the earlier volumes was so much added to by its special editor; but in this instance the additions are of great importance as regards both extent and content. The portions contributed by Dr. Rolleston reflect high credit on their author, and point to much diligent labour.

The physician who is about to study this volume has much pleasure as well as profit awaiting him. Were it but the means of calling attention to the importance of a careful routine examination of the intestinal evacuations, this admirable monograph was not written in vain.

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*Wounds in War: The Mechanism of their Production and their Treatment.* By Surgeon-General W. F. STEVENSON, C.B., A.M.S. Second Edition. London: Longmans, Green & Co. 1904.

SINCE 1897, when the first edition of this book was published, we have come through an experience of military surgery. This experience has doubtless led to the revisal of many of the opinions formerly held as to the proper treatment of gunshot wounds, and the expounding of these various changes occupies a large place in this new edition. The modification of the effects of wounds in war depends on two factors: the use of small-bore rifles, and the employment of antiseptics. General Stevenson lays stress on the latter. He mentions that, while the new bullet may, and often does, produce a smaller wound, the improved results cannot be attributed to that fact alone. In many cases, although the bone-injury is extensive, the patient recovers without the amputation which was formerly looked on as imperative. This happy ending of the case is due to the use of antiseptics.

In the first, or general, part of the book, the author deals with the mechanics of projectiles, the nature of the wounds inflicted by the various small-arm bullets, and by large projectiles or their fragments. The general symptoms are gone into—constitutional shock and primary hæmorrhage. The general principles of the treatment of wounds in war is

exhaustively dealt with in Chapters IV and V. The importance of antiseptic treatment, if possible from the beginning, and even after sepsis has occurred, is dwelt on, and the subject of secondary hæmorrhage is fully considered. The remarks on bacteriology are acknowledged to be fragmentary. We agree with this opinion, and we think that they might well have been omitted.

The remaining chapters treat of injuries to the various regions, and the treatment appropriate to each. There is very much that is full of interest, *e.g.*, the indications for amputation, but we cannot notice it at length. The chapter on abdominal injuries is peculiarly interesting, and here the author is quite frank as to the different principles which must govern the treatment of such injuries in the exigencies of field work and in the ideal surroundings of the civil hospital.

There is a tendency throughout the volume to repetition; nevertheless, the work merits great praise. We have no doubt that it will be largely read by our military *confrères*, and we would recommend it, further, to the attention of surgeons in civil practice.

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*A Pocket Dictionary of Hygiene.* By C. T. KINGZETT, F.I.C., and D. HOMFRAY, B.Sc. Second Edition. London: Baillière, Tindall & Cox. 1904.

THIS little book of 112 pages, and small enough to go easily into the vest pocket, bears a pretentious title which is not substantiated by its contents. Its only claim to be called a "Dictionary" is that the contents are arranged alphabetically. The book has nothing to recommend it, and its very feebleness disarms criticism. In the majority of instances an ordinary English dictionary will be found to give more reliable information. A few examples, taken at random from the pages of the book, will illustrate its trend and scope. "Aneurism" is defined as "a dilatation or *rupture* of an artery." "Bacillus: all those *pathogenic* organisms which have a rod-like structure are termed bacilli." Under "Bronchitis" we find the following:—"In case of an attack of bronchitis the patient should be kept as much as possible in one room; all draughts should be carefully avoided, and the air should be kept carefully saturated with moisture and 'Sanitas' oil by means of the 'Sanitas' bronchitis kettle. The relief to the patient of breathing this 'Sanitas'-impregnated air is quite astonishing. In cases where the patient cannot be kept indoors, one

of the 'Sanitas' inhalers should be used, and 'Sanitas' embrocation may be applied locally with great advantage." On page 30 (under "Disinfection") are found further directions for the use of "Sanitas" preparations and Kingzett's patent sulphur candles or formic sulphigators. Over twelve pages are devoted to the subject of vital statistics, or more than a tenth of the whole *Dictionary*.

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*Lectures, chiefly Clinical and Practical, on Diseases of the Lungs and the Heart.* By JAMES ALEXANDER LINDSAY, M.A., M.D., F.R.C.P. Lond. London: Baillière, Tindall & Cox. 1904.

THIS work is based on clinical lectures which the author has given to his classes at the Royal Victoria Hospital, Belfast, during the past fifteen years. The lectures deal with such subjects as the methods of diagnosis in disease of the lungs and pleuræ, pleurisy, the early diagnosis of phthisis, conditions which simulate phthisis, prognosis in phthisis, the treatment of phthisis, the causes and management of hæmoptysis, some rare diseases of the lungs, therapeutic problems in pulmonary disease, the examination of the heart, cardiac murmurs, the examination of the blood-vessels, cardiac symptoms, disorders of the cardiac rhythm, diagnostic problems in heart disease, and the prognosis and treatment of valvular disease.

The lectures are well written, and strike us as being well arranged from the student's point of view. They will doubtless be valued in their permanent form by past and present students and other friends of the author.

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## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

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### MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

**A Case of Acute Leukæmia in a Child 3½ Years old.** By H. Surmont and M. Debon (*L'Echo Méd. du Nord.*, 20th November, 1904).—The illness seemed to begin on 22nd May, 1904, with a sore throat, feverishness (temperature, 103°), general *malaise*, and swelling of the submaxillary



and cervical glands. The tonsils were enlarged, and covered with a membranous exudation, which, on removal, left a bleeding and ulcerated surface. The gums were likewise ulcerated, and the breath most offensive. The child at this time was regarded as having stomatitis. In spite of appropriate treatment, recovery was very slow, and the anæmia and debility seemed to get progressively worse. The temperature at times was considerably above normal. On 20th June there was noted œdema of the lower limbs, and a week later a purpuric eruption appeared. About this time the inguinal glands were first observed to be enlarged, and a little later those in the axilla. During July and August bleeding from the gums was considerable, and the temperature frequently registered 104°. On 2nd September two large hæmatomas developed, one on the right lower eyelid and the other on the lower lip. There was also bleeding from the bowel. At this time the œdema of the lower limbs was considerable, and it involved also the left arm and left side of the face. There was also œdema of the bases of the lungs. There was no enlargement of the liver and only slight increase in the size of the spleen, its lower border extending a finger's-breadth below the costal margin. The tonsils were still greatly enlarged, and the gums covered with blood clots. The cervical glands were now much enlarged, especially those on the right side of the neck, where they formed a mass extending from the mastoid process to the clavicle. The glands in the groins and armpits were but moderately enlarged, the largest not being greater than the size of a small nut. There was no evidence of enlargement of the mediastinal or peritoneal glands.

Examination of the blood :—

Red corpuscles, . . . . .	2,433,500 per c.mm.
White corpuscles, . . . . .	14,375 „

Of these last, 33·5 per cent were large mononuclear cells, 66 per cent small and medium-sized mononuclear cells, and 5 per cent polymorphonuclear cells. A certain number of "mast" cells were also to be seen.

The urine contained a small amount of albumen, but no blood. There were 1·87 grms. of uric acid excreted in the urine in the twenty-four hours. The child died on 9th September with symptoms of asphyxia.

**The Action of Röntgen Rays on Lymphoid Tissue.** Editorial comment (*Amer. Med.*, 29th October, 1904).—As a result of his recent researches, Heincke has been able to show that lymphoid cells are much more sensitive to the Röntgen rays than are the epidermal cells, which hitherto have been regarded as the first to be attacked. In the spleen there may be seen a fragmentation of the nuclei of the lymphocytes in the Malpighian corpuscles, while the spleen pulp and adjacent tissues remain apparently unaffected. A similar destruction of lymphoid cells may be seen in the lymphoid follicles of the intestine, in the thymus, and in lymphatic glands. This destructive action of the rays begins to take place within a few hours' exposure of the animal, and attains its maximum of intensity in from eight to ten hours; within twenty-four hours it has completely subsided. It is suggested, therefore, that the Röntgen rays be used as a method of treatment in such morbid conditions as those in which there is an overgrowth of adenoid tissue, such as leukæmia, pseudo-leukæmia, lympho-sarcoma, &c. And it is noted that several cases of leukæmia have been recorded as having been cured by the action of the Röntgen rays.

**The Pathogenesis of High Arterial Tension.** By Dr. Vaques (*La Méd. Mod.*, 23rd October, 1904).—Stimulation of the splanchnic nerves, either directly or by means of certain drugs in the circulation, raises the arterial tension. This is due to vasomotor constriction producing increased peripheral resistance. Dr. Vaques accepts the theory of a functional vaso-constriction being the first stage in the production of increased arterial tension, and he holds that at this stage there is no change in the structure of

the vessel. Arterio-sclerosis is a later stage, and, possibly, depends on, or is determined by, the preceding high arterial tension. The points at issue, therefore, are as to the nature of the substances which are capable of producing this spasm of peripheral vessels, and as to how vaso-constriction induces arterio-sclerosis.

Intoxications of renal origin—i.e., due to defective elimination by the kidneys, plays no important part in the pathogenesis of increased arterial tension, for the hypertension is often met with previous to any disease in the kidneys. Clinical evidence shows that increased tension precedes rather than is subsequent to renal disease, and experimental injection into animals of substances such as diseased kidneys fail to eliminate (e.g., urea) does not raise arterial tension. As to such substances as tobacco, alcohol, and lead being factors in its production, Dr. Vagues considers this as doubtful, and certainly not proved. Lead acts, without doubt, on the suprarenal glands, and it has been shown that the injection of adrenalin into the circulation will raise arterial tension. It is known, too, that in several cases with high arterial tension the suprarenals were enlarged, especially in the cortical part of the gland. Atheroma, too, has been produced in animals by the injection of adrenalin; and, indeed, adrenalin is the substance which is most capable of producing atheroma experimentally. The suprarenals have also been found enlarged in certain cases of atheroma. Further, small doses of adrenalin will produce a diuresis and almost always with an albuminuria accompanying it; so that, by injecting adrenalin, not only can we produce high arterial tension, atheroma of vessels, but also the symptoms of granular kidney. It may be, therefore, that by acting on the suprarenals, lead is a factor in the production of these diseases; but the above observations show that it is in the increased activity of the suprarenals that one must look for the main source of high arterial tension and its allied conditions.

## SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

**The Heidelberg Splint.** By Prof. Dr. O. Vulpinus, Heidelberg, Germany (*The American Journal of Orthopedic Surgery*, August, 1904).—This splint is designed specially to combine simplicity, security, lightness, strength, and easy adaptability to all possible cases calling for splint support. Using it, it is contended, the surgeon or the hospital is not under the necessity of having always at hand a large assortment of all shapes and sizes of splint.

The splint is of aluminium. It consists of a rectangular stem and of bracelets of varying lengths, each of the latter "having a slit in the middle to allow of introduction of the stem."

The stem, though firm, can be bent both on surface and sides. It is employed as follows:—

"A stem of the requisite length is procured. Then a series of bracelets of different lengths is applied according to the increasing or decreasing circumference of the member. In cases where the slits happen to be slightly bent, they can be straightened by means of a special pair of pincers. This serves at the same time, using slight pressure, to fix the bracelets in the required place. The stem is then adjusted to the long dimension of the member, the bracelets to its circumference, after which the splint is fixed by bandages."

The special advantages claimed, in addition to those mentioned above, are (1) the ease with which the splint can be thoroughly cleaned and sterilised; (2) the ease and convenience with which material sufficient for the preparation of a large number of splints may be packed and transported without requiring much space; (3) the special suitability of the splint for emergency work, and

for use in military surgery; (4) its easy modification or remodelling without being displaced or removed.

A number of diagrams accompanying the paper illustrate very well the chief applications of the splint to back, neck, head and neck, hand and wrist, lower limb, &c.

**Bier's "Congestive Method": Its Value in the Treatment of Joint Tuberculosis.** By Albert H. Freiberg, M.D., Cincinnati, Ohio (*The American Journal of Orthopedic Surgery*, August, 1904).—The author had, after a fair trial, given up employing Bier's method on account of the harmful results which occurred in some of his patients from its employment in a fashion much more rigorous and intense than Bier now advocates.

Even Bier, in his book on *Hyperæmia as a Therapeutic Agent*, admits the evil effects of a too intense application of the method. Instead of a high degree of venous congestion for many hours daily, he now finds it sufficient to limit the duration of daily congestion to one hour, and to produce a congestion short of what will cause pain or other paræsthesia. Freiberg, being dissatisfied with the present methods of treating joint tuberculosis, has once more had recourse to Bier's method as now modified.

The essentials of this are (1) that the congestion should not pass beyond the "hot stage"; (2) that the parts affected should feel distinctly warmer than the normal surface; (3) that the patient should feel no pain; (4) that the treatment should last not longer than one hour daily.

Freiberg prefers a bandage of elastic cotton webbing to the ordinary rubber bandage; the degree of congestion is more easily controlled, and patients of ordinary intelligence may soon learn how, properly, to apply the bandage for themselves. Bier lays greatest stress upon the method of congestion, little attention being given to effective mobilisation. Freiberg thinks that immobility and protection must also be carefully attended to. He details three cases—one of shoulder-joint tuberculosis, with a focus of destruction in the humeral head; one of tuberculosis of the right wrist, with marked involvement of the lower end of the radius, and extensive synovial affection; and a third, in which there was so severe tuberculous disease of the right wrist that amputation seemed to everyone the only course to adopt—in which the result of following out Bier's modified "congestive method" has been of the most promising character.

Other cases are referred to, but not in detail, and Freiberg gives it as his opinion that the outlook is not a little promising. He finds that not only is the effect of the method upon the general course of the disease distinctly beneficial, but that "the atrophy accompanying joint tuberculosis has become perceptibly less in cases which have been for some time under treatment." This has been tested specially in connection with disease of the knee. Bier's method requires "no little time and patience, as well as care in details, and unreasonable things should not be expected of it."

Bier in his book (*Hyperæmie als Heilmittel*, Leipzig, 1903, p. 189) says "that he no longer recognises a case as indicating amputation when he first sees it. The possibility of cure by congestion is never to be ignored."

Freiberg thinks this view is certainly not too optimistic, and suggests that in disease of the wrist and ankle, "where our therapeutic endeavours have hitherto been only too often unsuccessful," it would seem to be of especial importance.

**Final Results in Tendon Transplantation.** By Prof. Dr. Albert Hoffa, Berlin (*The American Journal of Orthopedic Surgery*, August, 1904).—Summarising the chief conditions for success in tenoplasty, Hoffa specially emphasised the desirability of having (1) perfect asepsis, (2) the minimum of hæmorrhage, (3) as healthy muscle as possible to deal with, (4) sufficient tension in actual union of the tendons.

Regarding the third of these, viz., the state of health of the muscle material, he pointed out that in anterior poliomyelitis there was not merely a fatty

degeneration and general atrophy of the muscles, but there was at the same time a regenerative change taking place, and this admitted of demonstration. On this, indeed, rests the recovery of the paralysed muscle. The affected muscles present all intermediate shades of colour, from rosy red to yellowish white, the differences depending upon the varying amount of fatty degeneration. Though it is best to choose for transplantation the rosy-coloured muscles, yet one need not entirely despair of even the yellowish white. The latter may be slower in recovery, but in default of better they should certainly be used.

As regards the proper tension under which tenoplasty must be carried out, of course in anterior poliomyelitis muscle tone and elasticity are greatly lost. To restore this in some measure even from the first the muscle and tendon must be shortened. This Hoffa regards as a most essential factor contributing to a good result. A limb totally paralysed cannot, of course, be restored to normal condition, but by tenoplasty the patient may be made to a certain extent more comfortable, less dependent on orthopedic apparatus, and flail joints may be rendered more stable.

Hoffa believes that in most cases of paralytic club-foot the methods of Nicoladoni and of Lange should be used in combination. The one operation does not exclude the other. Thus, "in a case of paralytic flat-foot, we take a part of the tendo Achillis, and, by Nicoladoni's plan, attach it to the lower end of the paralysed tibialis anticus, while we take the peroneus brevis, detach it from its insertion on the fifth metatarsal bone, take it behind (?) the tendo Achillis, carry it to the inner side of the foot, and here attach it to the periosteum of the scaphoid bone."

In Hoffa's opinion the most important essential for success is to have "the highest possible tension, with an over-correction of the deformity." In order to do this the deformity must be corrected before the operation of tendon-grafting. Thus, in a case of paralytic club-foot, the deformity should be corrected at least a fortnight before the operation, and the foot put up in the corrected position in plaster of Paris. It is thus possible to get the required degree of tension.

As regards after-treatment, the limb is placed in plaster and completely immobilised for six weeks. The plaster is then removed, and suitable splints are applied. These are worn for a good many months (frequently for six months), and are so arranged as to be readily removed for treatment by massage, electricity, gymnastic exercises, and baths.

**Surgical Procedures for the Relief of Infantile Paralysis of the Lower Leg.** By John Dane, M.D., and David Townsend, M.D., Boston (*The American Journal of Orthopedic Surgery*, August, 1904).—As the result of a careful investigation of a series of fifty consecutive cases from the records of the Orthopedic Department of the Boston Children's Hospital, the authors present, in carefully tabulated form, their report on the various procedures adopted, and formulate a number of conclusions from the statistics. It should be said that in all but fourteen of the fifty cases the ultimate result, at the time of their writing, had been ascertained.

Their views are of interest, more especially in connection with the essentials laid down by Hoffa in his contribution on tenoplasty and its final results (*q.v.*). Shortly, their conclusions are as follows:—

1. Transference of peroneus tertius or extensor longus hallucis has failed in all cases to restore the balance of muscular power, the transplanted muscle failing to hypertrophy (eleven such cases).

2. Simple shortening of extensors, even aided by transplantation of flexor longus hallucis, is of no permanent benefit in cases of talipes equinus (two such cases).

3. Insertion of peronei into a paralysed tendo Achillis in talipes calcaneus is disappointing (five cases—four giving poor results, one only fair).

4. Transplantation of peronei to inner side of foot for talipes valgus is somewhat more encouraging (six operations—two giving a good result, two fair, two poor).

5. Transplantation of a portion of the tendo Achillis to extensor aspect of foot for talipes equinus is more hopeful still (two operations—union with the common extensor better than with the anterior tibial).

6. Transference of the tibialis anticus, in whole or in part, to the outer edge of the foot for relief of equino-varus, is the most satisfactory of all as far as the results of tendon transplantation are concerned (three operations—two good results, one fair. The partial failure in the third case is accounted for by sloughing of a piece of silk used for lengthening the transplanted tendon. Subperiosteal insertion on the cuboid gives a better functional result than does attachment to the tendon of peroneus brevis).

7. A uniformly good result has followed astragalectomy (three cases—all successful).

8. Arthrodesis of tibio-astragaloid joint gives excellent results (nine operations, with seven good results).

Generally, therefore, they advise a much more careful selection of cases for tendon transplantation than was the rule three or four years ago, and for the great majority of hospital cases the greatest promise for a strong useful foot several years after the operation is given by astragalectomy or arthrodesis.

## NERVOUS DISEASES AND INSANITY.

By L. R. OSWALD, M.B.

**The Passing of Neurasthenia.** By Dana and others (*Medical News*, October, 1904).—Dr. C. L. Dana read a paper bearing the above title at a meeting of a New York medical society in October. In it he discusses very fully the value of the term "neurasthenia," and he points out its very wide application by showing that many cases of melancholia and hypochondriacal states of middle and later life have the term applied to them so that they may appear to be less serious to the patient. Such cases are, he says, psychoses and not neuroses, though he admits the difficulty of an exact diagnosis. This is certainly true with regard to mental or pseudo-mental states occurring about the time of adolescence. It has been the custom to call such conditions neurasthenic, and they are often accompanied by symptoms of nerve exhaustion; but they are really mental and not neurotic. Dana believes that during the next ten years the use of the term "neurasthenia" will probably disappear from serious diagnosis, and he does not seem to admit with Beard the existence of a definite set of symptoms to which the term may rightly be applied. He believes it is at present largely used to obviate the use of the word "mental" to the patient or his friends, but it was pointed out in the discussion that many patients and their friends were satisfied with the diagnosis of neurasthenia when perhaps the true condition was a slight mental aberration.

In Beard's mind, when he used the word, there was one ailment that was pathognomonic of the disease, and that was some form of phobia or morbid fear. The love of labelling all the morbid fears to which man is subject was, no doubt, carried by Beard to an absurd extreme, but it was done systematically. When patients suffered from this phobia, and were unable to control it, there was often found a physical basis, and the symptoms were somatic more than psychical.

It is not admitted in the discussion that there is any increase in the number of those suffering from states of nervous exhaustion, but in our opinion there is a distinct increase in those forms where, with the essential symptoms of headache, pain, and insomnia, there are also symptoms pointing to the existence of minor psychoses.

There are good grounds for claiming neurasthenia to be a definite disease;

but the term is often wrongly applied to many conditions of functional nervous origin and to psychical states, and this is done either because the true condition is not understood or to spare the feelings of the patient or his friends.

**A Case of Double Consciousness.** By Albert Wilson (*Journal of Mental Science*, October, 1904).—This case was briefly reported in a former number of the same journal, but the present account is long and minute, and gives an excellent description of this remarkable condition. The subject—a girl of 13 at the onset of the illness—had ten personalities, and her mental state in each of these is graphically described.

In one she was deaf and dumb, took no notice of loud voices, talked on her fingers, and made her thoughts known by writing. This continued for a fortnight, and she then passed into her normal self or into one of her other states. She might become herself for a few minutes several times a day, and it is interesting to note that certain treatment by her friends determined the occurrence of certain personalities.

Dr. Wilson suggests, as a theory for the whole phenomena of a minutely described attack, a vasomotor spasm of the middle cerebral, beginning at its most distant part and travelling to the temporal, causing deafness; then to the corpora quadrigemina, causing blindness; and, finally, to Broca's convolution, causing mumbling.

In 1904, nine years after onset of meningitis and after considerable improvement had taken place, it is noted that she remembers the catalepsy (a marked feature of her earlier condition), but that her memory is bad for ordinary things, and her mind a blank previous to 1898. Her parents state that she is unstable and easily upset mentally, and quite unlike what she was as a child.

Many cases of double consciousness have now been recorded, especially by French observers, but few in such detail as this, which, difficult as it is to abstract, well repays detailed study.

**Paranoia.** By Percy Smith (*Journal of Mental Science*, October, 1904).—The author, in his presidential address to the Medico-Psychological Association, took as his subject that of paranoia. He sketched the history of the term as applied to a form of mental disorder, and contrasted the views of Krafft-Ebing, Ziehen, and Kraepelin in Germany with those of Ballet and Arnaud in France, and with those of contemporary English writers on the subject. He sums up as follows:—

The term "paranoia" is useful if it be limited to cases of chronic delusional insanity in which there are organised and systematised delusions, whether of persecution or exaltation, and whether these run separately, concurrently, or by transformation from persecution to exaltation, and whether the disorder originates in childhood or later in life, and whether associated with heredity or not.

While admitting that paranoia may begin with an acute functional mania or melancholia, the author thinks such cases rare, and believes states of acute confusional insanity should be regarded, etiologically and clinically, and from the point of view of diagnosis and prognosis, as entirely apart from paranoia or chronic delusional insanity.

He does not agree with the German school in thinking that terminal dementia does not supervene in this condition, and he believes that dementia precox in its various forms may become the universal disease into which large numbers of otherwise unclassified cases may be thrown.

**Veronal: a New Hypnotic.** By Van Hussen (*Psych. Neur. Wochenschr.*, May, 1904).—This new hypnotic is gaining in favour, and only its costliness contra-indicates its use on a large scale.

The average dose is 15 to 30 grains, and, like sulphonal, its action is somewhat delayed. In severer forms of sleeplessness and excitement it often fails,

and toxic symptoms have been recorded after its repeated administration in the larger doses. It is best given dissolved in hot tea or milk, and, in the sleeplessness resulting from minor bodily complaints, as well as in that accompanying mild melancholic conditions, it is an excellent hypnotic. In these cases doses of 10 to 15 grains suffice, and after the larger doses giddiness, confusion, and a tendency to stagger may be noticed.

If it is the case that this drug possesses properties by which the destruction of albumen during metabolism is reduced to a minimum, then it should be specially useful in those cases where the administration of a hypnotic is indicated for a prolonged period. In cases where veronal fails, neuronal—another new hypnotic—may be tried. The dose is the same, but the hypnotic value is rather less, and, like veronal, it has the great disadvantage of costliness as compared with the equally efficient trional.

## PATHOLOGY.

By ALEX. R. FERGUSON, M.D.

**The Life-History of Cytoryctes Variolæ, Guarnieri.** By Gary N. Calkins, Ph.D. (Abstract from the *Journal of Medical Research*, Boston, 1904, "Studies on the Pathology and on the Etiology of Variola and Vaccinia").—The series of collected papers by Councilman, Magrath, Brinckerhoff, Tyzzer, Southard, Thompson, Bancroft, and Calkins, published under the above title, comprises the most complete and careful study of various aspects of small-pox which has come under our notice. The contents of the work include (1) a most thorough account of the pathological anatomy and histology of variola; (2) the life-history of cytoryctes variolæ, which paper we have selected for the present abstract; (3) a paper on the occurrence of cytoryctes variolæ (Guarnieri) in the skin of the monkey inoculated with variola virus; (4) a valuable paper on the etiology and pathology of vaccinia; (5) a paper on experimental variola in the monkey; (6) another on the leucocyte reaction in variola; (7) another on the infectiousness of the blood in variola; (8) an investigation undertaken to determine the infectiousness of the late stage of the skin lesion in variola; (9) a paper on the condition of the central nervous system in variola; (10) a clinical and experimental study of the bacteriolytic complement of the blood serum in variola; (11) a paper embodying clinical observations on variola, based on the Boston epidemic of 1902-1903; and (12), lastly, an excellent reasoned summary of the entire work by Professor W. T. Councilman.

The enormous amount of work comprised in these papers extended over a period of two years, and was carried out in a spirit of true collaboration amongst the various workers.

In his paper, Calkins deals first of all with the exceedingly wide distribution of parasitic protozoa in the animal kingdom, and mentions the occurrence of various sporozoa in human tissues and organs. He then mentions the "vaccine bodies" as having given rise to a sharp difference of opinion as regards their true nature ever since they were observed by Guarnieri in 1892. In a survey of the literature the careful work of Von Wasielewski must always demand attention for the painstaking manner in which he established the parasitic nature of these cell-inclusions in vaccinated tissues.

The difficulties which attend the study of this subject are very considerable. Efforts to cultivate sporozoa on artificial media, for example, have never yet succeeded, so that this initial means of proving the bodies observed to be organisms is not yet available. Further, experts are compelled to work out the life cycle of such organisms at present from their morphology alone, without the advantage of being able to study the living organism.

Calkins does not minimise this difficulty, and has been fully alive to the

possibility of appearances of the organism having altered in the interval between the death of the patient and the autopsy.

By those biologists who have devoted special study to the protozoa, the cytoryctes variolæ has been placed in the group of *microsporidia*. Now, the complete life-history of no single species, either of this group or of the closely allied group of *myxosporidia*, is known, "the sexual cycle being quite unrecognised at the present time." It is therefore apparent to even one possessing no special knowledge that a specially trained micro-biologist has to face great difficulties in the investigation of such a problem.

In order to establish points of similarity between the known microsporidia, myxosporidia, and the phases of development observed in the small-pox organism, Calkins mentions certain details with regard to the distribution and manner of asexual (spore) development which have been observed in members of these two groups.

*Brief summary of the conjectured life-cycle of cytoryctes variolæ.*—The first development of the germ in the host is unknown; it probably occurs in the seat of primary infection, forming an organism which reproduces by germs, probably similar to those which have been named "gemmules" by Calkins.

From this point onwards the observations are fairly complete. The gemmules become intra-cellular (cytoplasmic) amœboid organisms which give rise to similar gemmules. This process (designated by Councilman the "vaccine cycle") must continue for some time, for in variola the gemmules are distributed to all parts of the skin. The germs derived in this way next give rise to forms which penetrate the nuclear membrane, and develop into gametocytes (?) of two types—male and female gametes. The gametes conjugate (?), the zygote thus formed, develops into a comparatively large amœboid organism in which the "pansporoblasts" originate. These pansporoblasts give rise to primary sporoblasts, and the latter to multitudinous spores, the entire process taking place within the nucleus, and corresponding to the so-called "propagative reproduction" of other sporozoa. The spores thus formed may, in turn, infect fresh nuclei, and grow directly into new secondary sporoblasts, which give rise to similar spores, a true "schizogony," and a second means of auto-infection, by which the organism spreads throughout the nuclei and cells of the skin, and possibly to many of the other organs of the body, like the allied *noosema bombyces*, which infects every tissue and cavity of its insect host. These spores finally may transmit the disease to new hosts.

*A. Methods employed.*—The material used was all obtained from human skin taken at the autopsy. It was fixed in Zenker's fluid, hardened, and kept in alcohol, embedded in paraffin, and the sections cut as thin as possible. The stains used were Heidenhain's iron hæmatoxylin, Mallory's chloride of iron hæmatoxylin, the polychrome methylene blue eosin combinations (Weigert and Romanowsky), and the Borrell stain.

The organism was found to stain like the chromatin of tissue nuclei. With the more delicate differentiating stains in the above list, however, two grades of staining in different parts of the organism are brought out, differing apparently in the degree of nucleic acid present.

The author recommends the Romanowsky stain as giving beautiful results for certain phases of the parasites, e.g., the intra-nuclear spore stage, particularly in the early stage of development of these. It is of no value in the later stages of the organism.

Weigert's polychrome methylene blue and eosin combination and Borrell's stain are also highly recommended.

*B. Phases of the life-cycle.*—1. *Early cytoplasmic stage (youngest forms).* These are minute spherical homogeneous bodies, which gradually become differentiated as growth proceeds. The evidence of every stage in this cycle indicates that in vaccinia and variola we have to do with the same organism which, in vaccinia, has undergone some modification by reason of which the nuclear sexual phase is inhibited.

The early cytoplasmic form is regarded as a gemmule coming from the "sporulation" of the organisms in the primary seat of infection.



The smallest observed by Calkins measured seven-tenths of a *micron*, and gave no evidence whatever of any differentiation. They may occur singly, or there may be several in different stages of development in the same cell.

*Growth and differentiation.*—Regarding the cells which contain only the youngest forms of the parasite as a centre, various stages of development can be observed in the surrounding zones. The young organism becomes at first vacuolated in the centre, and frequently possesses a central dot staining intensely with methylene blue.

At this stage the organism has enlarged to about 3 *microns*. Differentiation next occurs in the peripheral portion in the form at first of clear unstained spots. These gradually enlarge, and now take on a green tint (Borrel's stain being used), the rest of the periphery taking the red colour. The red staining portion, which forms the substance of the gemmules at a later stage, Calkins calls provisionally the *protoplast* or germ-forming material. During these phases of growth the form of the organism varies greatly, e.g., spherical, fusiform, pyriform, or exceedingly irregular, as if from amoeboid activity.

2. *The adult amoeboid organism and gemmule formation.*—The largest forms of the cytoplasmic parasite measure 10-14 *microns*, and generally show some stage of gemmule formation. The red staining material alluded to above becomes aggregated into a number of minute dots, each of which finally lies in a small vesicle. These may be demonstrated by means of almost any chromatin stain (e.g., iron hæmatoxylin). These gemmules finally escape, and are capable of infecting fresh epithelial cells, giving rise anew to the earliest cytoplasmic forms of the parasite.

A reticulated framework, the residuum of the process just described, persists in the cells for some time after the reproductive bodies (gemmules) have been distributed.

3. *The early intra-nuclear phase*—(a) *The gametocytes.*—According to the author, the gemmules formed in the manner above described may enter the cell-nucleus, and in its interior enter upon quite another phase of their life-cycle. Calkins regards this intra-nuclear phase as having to do with the production of sexual gametocytes, the products of which probably conjugate, and the resulting zygote is the amoeboid mother-organism or "pansporoblast."

Minute undifferentiated bodies, in all respects resembling the early cytoplasmic gemmules, have been observed in the nucleus and on the nuclear membrane. Further, intra-nuclear adult forms, apparently in the process of gemmule formation, but without the characteristic vesiculated or chambered structure of the cytoplasmic forms, have been observed.

Of course, as Calkins points out, the only conclusive proof of the assertion that the gemmule enters the nucleus, and proceeds there to further stages of development, is to actually observe its entrance, but the condition of the material puts this out of the question. Since it is the fact, however, that the pansporoblast mother-organism arises inside of the nucleus, there must be some embryonic form in the same situation. It is, at least, a fact, as above stated, that minute gemmules may be observed inside the nucleus. As these increase in size they show the same staining reactions (central portions retaining the red of Borrel's stain) as the cytoplasmic gemmules. Similar red staining points, derived probably from the central mass of protoplast, develop at the periphery.

These "bright red points," in Calkins' view, constitute the male reproductive elements. After their liberation the gametocyte framework persists for some time as a residual structure, just as in the cytoplasmic phase.

(b) *The zygote.*—These are intra-nuclear amoeboid forms, characterised by a deeply staining body and a central nucleus-like mass of the protoplast. This becomes the mother cell of the primary sporoblasts.

4. *The pansporoblast.*—The author thus explains the meaning of this term:—"If the nucleus of an ordinary amoeba should divide many times, and if a portion of the protoplasm containing a few of these nuclei, while still within the body of the parent amoeba, should be differentiated into a sporoblast-forming region, that limited portion would be a pansporoblast." The parasite

during this phase reaches considerable size (10-12 microns), and from 8-20 primary sporoblasts develop within it. The nuclear membrane of the host-cell disintegrates and liberates the parasite, which probably is capable of moving from cell to cell, since nests of ten or twelve are occasionally found.

*Secondary nuclear phases—The spore.*—The germ, liberated by breaking up of the pansporoblast, migrates, and comes to rest within the nucleus of another epithelial cell. Here it gradually becomes sub-divided by a number of minute vesicles into as many chambers, in which spores are again developed. This may be termed the *secondary sporoblast*, to distinguish it from the primary sporoblast formed in the pansporoblast. The mature spores are finally liberated, and are ready to infect fresh cells.

The appearances of the various stages of the organism are well illustrated by upwards of eighty coloured camera drawings, and the conjectured life-cycle is illustrated by a schematic diagram.

It is of interest to note that many of the phases above described were found in the skin of the monkey inoculated with variola virus, a full account of which follows Calkins' interesting paper.

### *Books, Pamphlets, &c., Received.*

- Meals Medicinal with "Herbal Simples" (of Edible Parts): Curative Foods from the Cook in place of Drugs from the Chemist, by W. T. Fernie, M.D. Bristol: John Wright & Co. 1905. (9s.)
- Diseases of the Liver, Gall-Bladder, and Bile-Ducts, by H. D. Rolleston, M.A., M.D. Fully Illustrated. London: W. B. Saunders & Co. 1905.
- Atlas and Epitome of General Pathologic Histology, by Docent Dr. Hermann Dürck. Authorized translation from the German, edited by Ludvig Hektoen, M.D. With 176 Colored Illustrations on 80 Lithographic Plates and 36 Figures in Black and Colors. London: W. B. Saunders & Co. 1904.
- The Preparation and After-Treatment of Section Cases, by W. J. Stewart M'Kay, M.B., M.Ch., B.Sc. London: Baillière, Tindall & Cox. 1905. (15s.)
- Transactions of the Association of American Physicians (Nineteenth Session), held at Washington, D.C. Vol. XIX. Philadelphia: Printed for the Association. 1904.
- Manual of Hygiene for Students and Nurses, by John Glaister, M.D., D.P.H. Second Edition. Edinburgh: E. & S. Livingstone. 1905. (6s. net.)
- Auto-Biography of Frederick James Gant, F.R.C.S. London: Baillière, Tindall & Cox. 1905. (3s. 6d. net.)
- Cancer and Its Treatment, by A. W. Mayo Robson, D.Sc., F.R.C.S. Eng. London: Baillière, Tindall & Cox. 1905. (3s. 6d. net.)
- St. Thomas's Hospital Reports. Vol. XXXII. Edited by Dr. H. P. Hawkins and Mr. W. H. Battle. London: J. & A. Churchill. 1904. (8s. 6d. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FIVE WEEKS ENDING 21st JANUARY, 1905.**

	1901. WEEK ENDING 1905.				
	Dec. 24.	Dec. 31.	Jan. 7.	Jan. 14.	Jan. 21.
Mean temperature, . . .	40·3°	40·8°	45·0°	40·8°	37·0°
Mean range of temperature between day and night, . .	6·9°	10·8°	17·7°	19·5°	17·2°
Number of days on which rain fell, . . . . .	0	2	6	5	3
Amount of rainfall, . . ins.	0	0·39	0·35	0·97	0·27
Deaths registered, . . .	363	370	354	371	341
Death-rates, . . . . .	23·7	24·2	22·8	23·9	22·0
Zymotic death-rates, . .	2·7	3·3	2·1	2·8	2·4
Pulmonary death-rates, .	8·3	9·6	8·5	7·9	7·3
DEATHS—					
Under 1 year, . . . . .	82	91	65	67	71
60 years and upwards, .	87	70	76	84	76
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	1
Measles, . . . . .	7	4	3	4	4
Scarlet fever, . . . . .	...	2	...	...	0
Diphtheria, . . . . .	2	...	...	2	0
Whooping-cough, . . .	24	29	26	38	27
Fever, . . . . .	8	1	4	4	...
Diarrhœa, . . . . .	13	6	6	11	12
Croup and laryngitis, .	...	2	1	1	...
Bronchitis, pneumonia, and pleurisy, . . . . .	94	112	105	96	88
CASES REPORTED—					
Small-pox, . . . . .	...	...	...	1	...
Diphtheria and membranous croup, . . . . .	11	9	12	13	14
Erysipelas, . . . . .	11	24	26	27	16
Scarlet fever, . . . . .	20	19	20	20	15
Typhus fever, . . . . .	...	...	...	...	1
Enteric fever, . . . . .	14	14	17	13	8
Continued fever, . . .	...	...	...	...	...
Puerperal fever, . . .	1	3	5	1	1
Measles,* . . . . .	103	65	49	122	159

\* Measles not notifiable.

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ORIGINAL ARTICLES.

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THE INCREASE OF LUNACY.<sup>1</sup>

By W. A. PARKER, M.B., C.M.,  
Medical Superintendent, Gartloch Asylum, Glasgow.

THOUGH much thought for many years has been spent on the subject of the increase of registered lunatics in our midst, I have thought that we could profitably spend a short time in considering this matter. As a recent writer puts it—"From year to year, from decade to decade, from generation to generation, in spite of every effort to check the ravages of the disease, the insane continue to increase in great numbers, the leaven spreads annually with cumulative force, apparently under the influence of the natural law of reproduction, and the question has to be faced, how long will it take before the whole mass is leavened ?

"Notwithstanding the efforts and sacrifices of philanthropy, and the enormous expenditure for the upkeep of this class, notwithstanding that money is poured out like water in endeavours to stem the rising tide, which never ceases to flow and the ebb of which never comes, the increase of numbers goes on continually with growing intensity. Every

<sup>1</sup> Read at a meeting of the Glasgow Eastern Medical Society held on 2nd November, 1904.

year, without exception, for the last half-century has added fresh thousands to the previously existing numbers of the insane." What evidence have we that this is true? Take the following figures:—

Countries.	Number of Registered Lunatics.		Increase in this Period.
	1859.	1902.	
England, . . .	36,732	110,713	73,941
Ireland, . . .	6,270	21,630	15,360
Scotland, . . .	4,960	16,288	11,428
Totals, . . .	47,992	148,631	100,739

Or, to put it in another way, in the United Kingdom in 1862 there were 1·86 insane persons known to the authorities in every 1,000 of the population, and in 1902 there were 3·58 insane persons known to the authorities in every 1,000 of the population.

I think you will agree with me that these figures call for thought on the part of every medical man, for who is to give a lead in this matter if we do not?

Let us take the figures for Scotland according to the latest Blue Book. At 1st January, 1858, there were 5,824 insane persons known to the General Board of Lunacy; and at 1st January, 1904, there were 16,894 insane persons registered, an increase of 11,070. That is to say, the number of known lunatics has increased since 1858 by 190 per cent, while the increase of the population in that time has been 52 per cent. Put in this way the increase of lunacy is an eye-opener. One fact alone is somewhat hopeful. In 1892 the insane numbered 250 per 100,000 of the population, while last year their number was 245 per 100,000. This is, I believe, the first time that any real check in the increase of our insane population has taken place, and it suggests that possibly one of the factors in the increase has reached its limit. I refer to the gathering in of the uncertified and harmless imbeciles and weak-minded in country districts. Averaging over the country, each lunatic in Scotland costs £43, 5s. 8d. a year. This covers the cost of providing land and buildings, and of paying annually one-thirtieth of the capital expenses incurred, as well as the treatment and maintenance of the patients. It

amounts to three-quarters of a million sterling a year. The explanations of this steady increase in lunacy are various.

1. In 1857, when district asylums were first arranged for by Act of Parliament (owing to the dissatisfaction felt with the treatment of lunatics in the lunatic wards of poorhouses), a great impulse was given to the better and more thorough care of the insane throughout the country. This led to the gathering into the asylums of many weak-minded and insane folk who had previously been cared for in their own homes. The village idiots and harmless demented and imbeciles thus, for the first time, were *registered* as insane, and this impulse has acted right up to the present time, and probably the increase from this cause is only now becoming stationary. Increase of registered lunatics from this cause is not a real increase of lunacy, but it costs as much as if it were.

2. Again, in 1874-75 an annual grant in aid of the care of pauper lunatics was first given by the State. This in 1889 was altered, and a fixed sum of £90,500, afterwards supplemented by another £25,000, was given instead. This sum when distributed was equal to about 4s. a head per week for all registered lunatics on whom a sum of not less than 8s. a week was spent in maintenance. This useful grant in aid has been a fruitful source of increase in registered lunatics, not only in the poorer outlying districts, but even nearer home. Imbeciles living with their friends and harmless demented have been certified, not for their better care, but in order that the parish might get the State grant of 4s. a week. Very many senile cases, that might easily and suitably be treated in the infirmaries of poorhouses, are certified and sent to district asylums in order to earn the grant. Hear what the General Board of Lunacy for Scotland have to say on this subject (Blue Book 44, p. 59)—“The increase shown in the tables submitted is believed to be sufficiently accounted for by the reasonable supposition that a great many persons were recognised as lunatics and sent to the asylum for treatment in 1900, who would not have been so recognised and treated in 1881. This change, though much less recent in most places than in Lewis, is common to all Scotland, and is believed by the Board to account for the general growth of pauper lunacy in Scotland. It has its chief source primarily in (a) the more widely spread and strong desire, often eagerness, to look to the parish as bound to provide for the mentally defective members of a family; and (b) the increased willingness of parish councils to recognise claims for assistance founded on mental defect. These causes would probably have operated

had there been no 'Pauper Lunatic Grant,' but there can be no doubt that the grant, especially in the poorer areas of the country, has stimulated both causes. An examination of the Board's registers shows that in the parishes of Lewis persons were often formally certified and intimated as pauper lunatics in batches at one date. Many of these were already in receipt of relief as ordinary paupers. Many, both of paupers and non-paupers, were, at the time of formal certification as lunatics, old or middle-aged persons who had been imbecile from birth. Such things as a change of inspector of poor in Highland parishes has often resulted in the sudden appearance of a large number of pauper lunatics in a parish which, up to that time, has presented a comparatively clean register. The gradual change in views and circumstances, which has led to an increase in the registered lunatics throughout Scotland, has been, as might be expected, longer in taking effect in Lewis and similar outlying districts, and the effect in such districts has been more marked than in the wealthier parts of the country, because the great bulk of the people are poor, and claims to relief on account of mental defect are therefore general and difficult to resist." Here, again, the increase of lunacy is not a true one. It is only an increase of *registered* lunatics.

3. There is a steady tendency observable nowadays for the rural population to drift towards the larger towns, and it is undoubtedly the case that many weaklings and senile cases are consequently sent to asylum care, as their friends cannot look after them in town as they could have done in a quiet country place. This reasonable and easily explained cause of increase in registered lunatics is again not a true increase of lunacy.

4. Besides the foregoing causes of asylum accumulation of the insane, there is apparently present an increasing reluctance to be burdened with the care of aged or insane relatives, and an increased confidence in the care and kindness of asylum treatment. Again, accumulation from this cause is not true increase. In our female senile bed ward, for instance, there are 26 cases averaging 71·5 years of age, and only 2 of these were admitted under 60 years of age.

5. A true and regrettable increase is probably represented by the increase of general paralytics and other incurable wrecks in our urban asylums. Dr. Clouston, of Morningside, reports the admission of 56 general paralytics in one year; and no less than 25·75 per cent of our deaths here last year were due to general paralysis. What the true cause of this

terrible disease is we do not yet know, but, whatever may be the immediate or exciting cause, there is little doubt that it is most frequently associated with a syphilitic infection and alcoholic excess. The probability then is that this increasing prevalence of general paralysis of the insane is due either to a wider spread of syphilis or a looser moral tone in the community generally. This is a true increase of insanity.

6. In spite of the increased numbers of general paralytics and senile cases in our asylums now as compared with 1858, the death-rate is only slightly greater now—8·2 per cent on the average number resident in 1858, as against 9·7 per cent this year. This means a great increase in the number of registered lunatics, but an increase by accumulation only, due to a really lessened death-rate. For instance, by means of our sanatorium and other hygienic reforms, we here have cut down our death-rate from tubercular disease from an average one of 18·18 per cent to 9·4 per cent, with the consequent costly prolonging of many useless and hopeless lives. Finally, the reduction of infant mortality outside asylums means not only an increase in the number of cases of insanity, but the probability of many more adolescent cases which, entering asylums in youth, may linger on till advanced old age, so most effectually aiding in the growing accumulation of registered lunatics.

7. For this last cause our improved public health administration is undoubtedly responsible. Interfering with the natural law of the survival of the fittest, it has enabled many weaklings to live to propagate their species—other weaklings—and probably it is more by reduction of the infant mortality than in any other way that the evil has been done. Insanity, above all diseases, is a matter of heredity. A hereditary instability, if not actually a hereditary predisposition to insanity or other neuroses, is almost invariably present in the insane. A lessened infant mortality allows a number of weaklings and imbeciles to survive, and so increases our asylum populations by these imbeciles, and by the survival to marry and procreate of others of unstable mental equilibrium. The tables I now show you are published by the General Board of Lunacy in their reports (Blue Book 45, p. 66, Table V).

Here is a striking state of matters. The Highland and insular parts of Scotland head the list with a very much larger proportion of mentally defective persons to population than the industrial parts of the country, which stand together, and have easily the best record of mental health. To quote the Blue Book—"We thus have the startling result shown



that where alcoholic excess and other forms of vice are, with good reason, supposed to be least common, and where life is most free from worry, strain, and excitement, mental defect is most prevalent; while, on the other hand, where drink, vicious living, worry, and stress are all at their highest the prevalence of mental defects falls to its lowest point." It must, of course, be borne in mind that the southern or industrial group has been aided in two most important ways. First, drink and vicious living lead to comparatively rapid degeneration and death, as in general paralysis, and so do not burden a county

TABLE V.

Counties.	Proportion of mentally defective per 100,000 of population.	Counties.	Proportion of mentally defective per 100,000 of population.
1. Argyll, . . . .	842	18. Kincardine, . . .	510
2. Sutherland, . . .	775	19. Kirkcudbright, . .	508
3. Ross & Cromarty, .	767	20. Kinross, . . . .	487
4. Nairn, . . . . .	745	21. Dumfries, . . . .	481
5. Caithness, . . . .	720	22. Wigtown, . . . .	477
6. Inverness, . . . .	705	23. Peebles, . . . . .	451
7. Orkney, . . . . .	680	24. Edinburgh, . . . .	434
8. Shetland, . . . . .	675	25. Clackmannan, . . .	412
9. Bute, . . . . .	650	26. Selkirk, . . . . .	411
10. Perth, . . . . .	602	27. Fife, . . . . .	398
11. Elgin, . . . . .	594	28. Ayr, . . . . .	381
12. Haddington, . . .	592	29. Lanark, . . . . .	368
13. Banff, . . . . .	587	30. Stirling, . . . . .	356
14. Berwick, . . . . .	562	31. Renfrew, . . . . .	319
15. Roxburgh, . . . .	533	32. Linlithgow, . . . .	310
16. Aberdeen, . . . .	516	33. Dumbarton, . . . .	291
17. Forfar, . . . . .	513		
Average, . . . . .		446	

for such a time as, say, imbecility. In other words, they do not so much tend to accumulation. Secondly, the industrial group of counties for many years has been recruited by a "constant stream of marriageable men and women of wage-earning capacity," the pick of the districts whence they came. Table VII shows the proportion of imbeciles under 20 belonging to each county per 1,000 persons living under 15 years of age. This age (15) has been chosen, as the migration from the Highland and Island districts above that age is so enormous.

Table VIII is only for one year (1900), but even so it indicates that our industrial counties owe much of their immunity from imbecility to their high death-rate in childhood, especially in the first year of life.

These, then, seem to me to be the main causes of the immense increase in registered lunatics in this country, and I believe that, to a considerable extent, it is a true increase. I have not entered into the question of a possible increase in

TABLE VII.

Counties.	Proportion of Imbeciles under 20, belonging to each county per 1,000 persons living under 15.	Counties.	Proportion of Imbeciles under 20, belonging to each county per 1,000 persons living under 15.
1. Sutherland, . . .	2·90	18. Kincardine, . . .	1·56
2. Orkney, . . .	2·73	19. Argyll, . . .	1·43
3. Berwick, . . .	2·72	20. Banff, . . .	1·40
4. Ross & Cromarty, . . .	2·49	21. Kinross, . . .	1·34
5. Shetland, . . .	2·37	22. Edinburgh, . . .	1·30
6. Nairn, . . .	2·23	23. Forfar, . . .	1·26
7. Haddington, . . .	2·13	24. Elgin, . . .	1·25
8. Wigtown, . . .	2·09	25. Lanark, . . .	1·25
9. Roxburgh, . . .	1·96	26. Linlithgow, . . .	1·24
10. Inverness, . . .	1·93	27. Ayr, . . .	1·15
11. Peebles, . . .	1·82	28. Fife, . . .	1·12
12. Kirkcudbright, . . .	1·81	29. Bute, . . .	1·11
13. Dumfries, . . .	1·78	30. Renfrew, . . .	1·01
14. Aberdeen, . . .	1·65	31. Selkirk, . . .	0·87
15. Caithness, . . .	1·62	32. Dumbarton, . . .	0·86
16. Perth, . . .	1·61	33. Stirling, . . .	0·70
17. Clackmannan, . . .	1·57		
Average, . . . . .		1·35	

early senility, due to the stress of modern life, as I have not been able to collect any satisfactory figures on the point.

The question, what can we do to improve matters? I would like shortly to refer to. We can hardly advocate that an increase in our infant mortality should be permitted, but there are other possibilities. Sterilisation of patients before discharge from an asylum, and of all criminals before discharge, say on a third or fourth conviction, would be opposed and difficult to carry out, but would, I think, be thoroughly justified for the preservation of society. Short of this, a measure of benefit would result

from a law automatically dissolving marriages in all cases of insanity, and making it illegal for anyone to marry who had suffered from epilepsy or insanity. I have at present here a patient who was discharged in a demented condition from a Scottish asylum to the care of her husband. She promptly became pregnant, and was delivered of an imbecile child. Another of my present cases, an epileptic, was discharged to the care of her mother, and was re-admitted pregnant to her husband, and delivered in the asylum of a healthy child. Instances such as this might be multiplied indefinitely. A

TABLE VIII.

Counties.	Proportion of deaths under 10 per 1,000 persons living under 10.	Counties.	Proportion of deaths under 10 per 1,000 persons living under 10.
1. Shetland, . . .	11·1	18. Dumfries, . . .	18·8
2. Orkney, . . .	11·2	19. Caithness, . . .	19·0
3. Peebles, . . .	12·8	20. Bute, . . .	19·0
4. Sutherland, . . .	13·3	21. Haddington, . . .	19·1
5. Kirkcudbright, . . .	15·6	22. Wigtown, . . .	19·2
6. Berwick, . . .	16·1	23. Fife, . . .	19·7
7. Argyll, . . .	16·7	24. Inverness, . . .	21·5
8. Kincardine, . . .	16·7	25. Linlithgow, . . .	22·1
9. Nairn, . . .	17·3	26. Aberdeen, . . .	23·0
10. Elgin, . . .	17·3	27. Ayr, . . .	23·1
11. Banff, . . .	17·4	28. Stirling, . . .	25·8
12. Kinross, . . .	17·5	29. Edinburgh, . . .	27·8
13. Selkirk, . . .	18·0	30. Forfar, . . .	28·0
14. Clackmannan, . . .	18·2	31. Dumbarton, . . .	28·5
15. Perth, . . .	18·4	32. Renfrew, . . .	32·4
16. Roxburgh, . . .	18·5	33. Lanark, . . .	37·5
17. Ross & Cromarty, . . .	18·7		
Average, . . . . .		27·9	

question which we, as a profession, ought to be more consulted on is that of education. One very constantly sees adolescent cases breaking down who were very clever at school, and instead of being discouraged in their book work, as any wise physician would have advised, and driven to outdoor games, &c., have been forced and driven to school honours, with the result of a mental breakdown, which a wiser upbringing might have avoided. Here the family physician alone can aid.

Finally, I have left a large question to the last. Alcohol is a prime factor in the causation of a large number of cases of

insanity, but there is one class to which I specially wish to refer. A large number of those who do not themselves become insane through drink are preparing a legacy for the future in the form of insane offspring to be cared for. During the last two years 96 cases have been admitted to Gartloch under 26 years of age. Of these no reliable history was obtainable in 24 cases, and in 18 cases there was no record of parental excess in alcohol. In the other 54 cases, however, there was a history of alcoholic excess in the direct line. Thus, parental excess in alcohol was present in 78·2 per cent of the admissions under 26 years of age. This contrasts in a rather striking way with the average hereditary predisposition to alcoholism in the admissions over all for these same years. Excluding all cases where the history was absent or unreliable, we get a hereditary predisposition to alcoholism in 52·3 per cent for all admissions. If, however, the adolescents be subtracted from the general average, we find that 78·2 per cent of those admitted under 26 years of age have a hereditary predisposition to alcoholism, and only 41·5 per cent of those admitted above that age. It is difficult to say how this large proportion of alcohol-caused insanity can be lessened, but there is no doubt that the first step must be the awakening of the public generally to a realisation of the evil. It is of little consequence whether the large amount of adolescent insanity caused by parental drunkenness is a matter of environment or direct heredity; the evil is there demanding attention. No less than 230 of our population of 670 broke down when under 26 years of age.

Some regulation of the abuse of alcohol is needed, whether by public-house trusts or reduction of licenses, I do not care which, so long as we keep trying honestly to find a solution.

As regards the prevention of insanity, much may be done in the future by the stamping out of tuberculosis, by legislating to prevent the marriages of epileptics and other degenerates, and by a more thorough control of the drink traffic, but it will be long before any such measures can begin to tell on our steadily increasing asylum population.

## CASE OF VAGITUS UTERINUS.

By A. FRASER, M.A., M.B., CH.B.,

Formerly House Physician and House Surgeon, Glasgow Royal Infirmary;  
House Surgeon, Glasgow Maternity Hospital; and Assistant  
Medical Officer, Argyll and Bute Asylum.

ON 2nd February, 1904, I was called by the district nurse in Benbecula to a confinement in which she had made the diagnosis of a brow presentation. Before she was called, the patient, who was a primipara, aged 25, was said to have been in labour for a week under the care of an untrained "midwife." The membranes had ruptured before the nurse arrived. The pains had for some time been weak and infrequent, and the patient appeared much exhausted. The tongue was moist, but the pulse was small and soft and numbered 116 per minute.

On abdominal examination, the head was found to be presenting and engaged, but both ends of the head were equally accessible. The child was lying dorso-anterior, with the occiput to the left. The foetal small parts could be felt with considerable ease. The uterus was not contracted down upon the child. The foetal heart was best heard to the right of and below the umbilicus, and the sounds were so loud as to make one imagine for a moment that they came from the mother's heart. A loud blowing murmur followed the first (foetal) sound. The foetal pulse-rate was 120. The vaginal orifice was small, and the perineum very rigid. The os was about the size of a five-shilling piece and unyielding. The brow was presenting, and the face could be easily reached by passing the fingers up towards the right sacro-iliac articulation. I attempted, without success, to press up and flex the head at the end of the examination. I then placed the patient in the genu-pectoral position in order to repeat the attempt, but just after she assumed this posture a series of plaintive cries were heard to come from the vagina. The patient herself heard them and recognised their source, and they could be heard at the other side of the room. They were repeated at intervals until operative interference was commenced.

As the child had evidently inspired several times *in utero*, I considered that the only chance of its survival lay in a very speedy delivery. Two methods of securing this presented themselves—

1. Manual dilatation of the cervix followed by flexion of the head and the application of forceps, and a rapid extraction facilitated by bilateral incision of the perineum.

2. Bilateral incision of the cervix, manual flexion of the head, application of forceps, and rapid extraction facilitated by bilateral incision of the perineum.

Setting aside the injuries to the maternal soft tissues involved in either of these procedures, the time occupied would, I thought, preclude the possibility of the child's survival, and I therefore decided, in the interest of the mother, to deliver by version.

After a vaginal douche she was put under chloroform, and I dilated the cervix sufficiently to admit my hand, pushed up the head, and seized and drew down the near foot, aiding the version by the other hand outside. The chloroform was then stopped, and a delay of almost half an hour was made in the hope that the uterine contractions might return. During this period the fetal heart became inaudible. The pains did not return, and I applied intermittent traction, pressure being applied to the uterus to prevent, if possible, the slipping up of the arms. The rigidity of the perineum presented a considerable obstacle to the extraction of the breech. When the cord could be felt there was just a suspicion of pulsation, and the delivery was then quickly completed.

Immediately after delivery the child, which was much cyanosed, was observed to gasp. Artificial respiration was kept up for some time, and  $\frac{1}{80}$  gr. strychnine given by hypodermic injection, and the breathing gradually became regular. During the few hours following, slight clonic convulsive movements occurred in the face and limbs at intervals of a few minutes, causing the child to cry, but she slept between the attacks, and they did not call for treatment.

The mother's pelvis was large; the sacral promontory could not be reached by the fingers in the vagina; the intracristal diameter was  $12\frac{3}{4}$  inches (33 cm.), and the intraspinal  $10\frac{3}{4}$  inches ( $27\frac{1}{2}$  cm.).

The measurements of the child's head were as follows:—Biparietal,  $3\frac{3}{4}$  inches (9.5 cm.); bitemporal,  $3\frac{1}{2}$  inches (9 cm.); occipito-frontal,  $5\frac{1}{8}$  inches (13 cm.); occipito-mental,  $5\frac{5}{8}$  inches (14 cm.).

Subsequent examination of the child's heart revealed no abnormality; the V.S. murmur heard before birth was evidently the funic souffle. During the latter part of the extraction, the perineum was slightly torn. It was sutured, and healed well.

The time which elapsed between the first cry and the delivery amounted to fully an hour and a half. Further, from the moment when the cervix was plugged by the arm used in turning till the delivery of the trunk was completed all fresh supply of air to the child was cut off (except for the short period occupied in pulling down the leg after my arm was withdrawn from the cervix), and during most of that time, therefore, the foetal respiration must have been carried on through the placenta. But, in order to utter cries that could be heard at the other side of the room, the child must have inspired with a considerable degree of fulness, and therefore the greater part of the blood entering the pulmonary artery, which had previously passed by the ductus arteriosus into the aorta, must have been diverted to the lungs. Thus the aid of the right ventricle in carrying on the systemic circulation, which in the foetus (including, as it does, the placental circulation) is somewhat extensive, was lost. Nevertheless, after this change in the child's circulation occurred, the placental circulation was maintained by the effort of the left ventricle alone for more than three-quarters of an hour (in the mother's interest, since I thought the child had no chance, the delivery was not hurried till the cord was found to be pulsating); and it would seem that the explanation of this circumstance is to be found in the very energetic action of the foetal heart indicated by the unusual loudness of the cardiac sounds and funic souffle already referred to. The marked cyanosis of the foot while the trunk was still in the uterus was sufficient evidence that there was no reversion to the foetal type of circulation.

In view of the rarity of vagitus uterinus, I have collected some other recorded cases, and summaries of these are appended to this article. Peiser states that in this condition, "contrary to what would be expected without clinical evidence, the prognosis when a cry is heard is not unfavourable to the child," and the cases cited below support that view. The present case would appear to indicate that the prognosis ultimately depends upon the ability of the child's left ventricle to maintain the placental circulation during that part of the delivery when pulmonary respiration is not possible, if such a period should occur and last long enough to be of importance. In vertex cases delivered rapidly by forceps this period will usually be short, and experience shows that the prognosis is good (six cases, no deaths). In breech cases it is likely to be

longer, and the average mortality is found to be higher (two deaths in six cases). It is possible that in some of the cases the circulation may revert to the foetal type after the cessation of the cries.

Professor Defaul and M. Noel Gueneau de Mussy were present at a case where "the intra-uterine cries of the foetus were distinctly heard during repeated attempts at delivery by the forceps, the head remaining at the superior aperture of the pelvis for a considerable time." The fate of this child is not recorded.—(*Medical Times and Gazette*, 1879, from *Presse Méd. Belge*.)

Harlow reported a case where "the bag of membranes was formed" when he arrived, and ruptured soon after. The head presented, and the child screamed twice while the head was still in the superior strait, and repeatedly during its passage through the pelvis. The mother stated next day that it "began to cry four weeks before birth, and continued to do so at intervals till birth, after which it had not cried at all." This child appears to have survived, but the time occupied in delivery is not given.—(*London Medical Record*, 1883, from *Canada Medical Record*.)

Loverock: The child cried after application of forceps while the head was in the superior strait, and again with each traction. The child survived, but the time occupied in extraction is not recorded.—(*Medical Press and Circular*, 1887, vol. i, p. 458.)

W. Curran states that the Taj at Agra owes its inception to an outcry of this sort when the Queen Munthaz Memouwer Begum was in labour with her last child.—(*Medical Press and Circular*, 1887, vol. i, p. 484.)

M'Lean reports a case where he found the membranes ruptured, and during rectification of a malposition of the head the child cried. It cried again during the application of forceps, and continued to cry "for four or five minutes till delivery was safely accomplished." Mother and child did well.—(*British Medical Journal*, 1889, vol. i, p. 611, from *American Journal of Obstetrics*.)

Peiser records a case where the child was delivered alive by forceps, and mentions other fifteen authentic cases.—(*British Medical Journal*, 1903, vol. ii, *Epitome* § 260, from *Monats. f. Geb. u. Gyn.*)

Reidhaar, of Bâle, reports a case where labour was induced on account of weakness of the mother following enteric fever



with complications. The child was delivered alive, though much asphyxiated, sixteen hours after the first cry.—(*British Medical Journal*, 1902, vol. i, p. 541.)

Westmorland reports a case where the membranes were unintentionally ruptured by a catheter used to induce labour. A quantity of liquor amnii escaped, air entered, and the child cried. Labour commenced after thirty hours, and was terminated with difficulty by forceps. Both did well.—(*British Medical Journal*, 1901, vol. i, p. 256.)

Planchu and Reure discuss a case where the mother complained of a discharge of water. Reure ordered rest in bed and a vaginal douche. He was called back on account of loud crying. The cries continued for two and a half hours. The douche had been given by a pear-shaped syringe, which injected as much air as water. Fœtal movements occurred daily for the next nine days, the heart averaging 135 per minute. The child was born breech first on the ninth day, much cyanosed, but alive. It was lost because the mother required all his attention on account of bleeding.—(*British Medical Journal*, 1901, vol. i, *Epitome* § 65.)

Grandin, while performing version, heard the child cry as the foot appeared at the vulva, the head being in the upper uterine segment. The cries were repeated with each traction, but stopped with the emergence of the trunk. The child was asphyxiated, but recovered. He mentions a second case, where S. Marx had turned for contracted pelvis. The child was born asphyxiated, and could not be resuscitated. He also refers to a case where H. L. Collyer heard cries while making traction with the forceps. He turned at once, but the child was born dead.—(*British Medical Journal*, 1895, vol. i, *Epitome* § 382.)

E. Temple Smith reports a case where progress was prevented by prolapse of a hand. There was great difficulty in replacing it, and he decided to turn. While he was feeling for the knee the child cried, and again when the foot was brought down. The labour was allowed to take its course, as the parts were not sufficiently dilated for rapid delivery, and the child was born after three hours, somewhat asphyxiated. It did well.—(*British Medical Journal*, 4th February, 1905.)

PERFORATED ENTERIC ULCER IN A CHILD OF 7—  
OPERATION TWENTY-THREE HOURS LATER—  
PNEUMONIA—RECOVERY.

By JOHN PATON, M.D.,

Late Resident Medical Officer, Govan Fever Hospital; late Resident  
Assistant, Victoria Infirmary.

M. W., a little girl, aged 7, was admitted to Govan Fever Hospital on 13th September, 1904, suffering from enteric fever. She had been confined to bed from 10th September, and looseness of the bowels had been present for three days before admission.

The temperature on admission was 103° F. There were no spots, and no apparent splenic enlargement. Abdominal tympanicity was marked, but there was no tenderness.

At midday, on the 16th, the nurse in charge reported that the child had just had a rigor, and complained of pain in the abdomen. On examination the temperature was found to have risen from 101.5° to 104°, and the pulse from 110 to 130, and the child had a somewhat pinched look. There was tenderness on palpation of the abdomen, and slight muscular rigidity. The nurse stated that she had taken it upon herself to give a teaspoonful of castor oil on the evening of the 15th, and that patient's bowels had moved four times just before the rigor occurred.

I considered the case one of perforation, but as there was no encroachment on the liver dulness, opinion on the subject was divided. In the evening the pulse was 140, abdominal rigidity and tenderness were marked, and the liver dulness was partly obliterated. Operation was still delayed.

On the morning of the 17th the child was collapsed, the pulse was 150 and thready, and every two or three minutes there was vomiting of thin fluid of fæculent appearance, but without marked odour. The liver dulness was abolished.

Twenty-three hours later, when the prospects of recovery seemed hopeless, I opened the abdomen in the middle line, Dr. Allan giving chloroform. On entering the peritoneal cavity a large quantity of muddy fluid escaped, and a general peritonitis was discovered. The lower portion of the small intestine was especially congested, covered with lymph, and partially collapsed. About a foot from the termination of the

ileum there was a perforation about the size of a hemp seed. As a solitary follicle had apparently ruptured, a few Lembert's sutures were inserted, the perforation being turned in. The intestines and abdomen were thoroughly cleansed with warm salt solution, and drainage tubes were inserted in the pelvis.

At the end of the operation, which lasted about half an hour, the patient was pulseless. Rectal feeding was employed every two hours, and in the evening the pulse was 120 and of fair volume. Vomiting occurred once, eighteen hours after the operation, and the bowels acted freely on the 19th. Vomiting of dark bilious fluid occurred twice on the 23rd, but was apparently checked by a dose of bismuth and grey powder.

On the morning of the 28th the temperature and pulse rose, the latter being 128 in the morning, 140 at noon, and 120 in the evening. The temperature and pulse kept up, but the cause of this was not discovered until the 30th, when signs of pneumonia were detected at the left base. The child now passed through an attack of acute lobar pneumonia, which extended from base to apex, but with no sign of pleuritic effusion.

By 14th October the lung was clear, but did not expand so freely as the right.

No further complication ensued, and the child was dismissed well on 3rd December.

Nutrient enemata alone were given for ten days after the operation, with sips of warm water, and the pelvic drain had to be kept in for about three weeks.

The interest of this case lies in the tender age of the child, and in her tenacity of life. Recovery was aided by the fact that the perforation was single and readily found, and as the bowels had moved several times before the rupture occurred not much faecal matter could escape through the perforation. The case also shows the danger of giving castor oil in enteric fever. No case so young as this has been previously reported in Scotland.

Great credit is due to Nurse Robertson for her skilled attention to the after-treatment of the case.

## THE PRESENCE OF CONNECTIVE TISSUE CELLULAR ELEMENTS (GLIA ?) IN EPITHELIUM.

A CONTRIBUTION by Dr. Thomas Reid to the histology of the epithelium of the cornea, of the skin, and of the hair follicles, has just been published. It is the outcome of investigations undertaken with the view of finding an explanation of the origin and nature of certain fibro-cellular structures seen in the corneal epithelium in cases of disease and injury of the eye, in which the cornea had not been directly implicated, but had suffered some disturbance of nutrition. After studying the appearances in the cornea, Dr. Reid extended his researches to the skin and hair.

He made a series of microphotographs, and recently presented them in an album to the Royal Academy of Medicine of Turin. Professor Reymond, of Turin, communicated to the Academy the results of Dr. Reid's investigations, and demonstrated on several occasions the various microphotographs in the album. His remarks on the subject, together with reproductions of a selection from the microphotographs, were published in the journal of the Academy<sup>1</sup> in April of last year, on the occasion of Dr. Reid being elected a foreign corresponding member of the Academy.

It is difficult, in the form of an abstract, to do justice to Dr. Reid's researches, but our readers will doubtless be glad to be in possession of the conclusions which he has arrived at. Those who wish for more detail should study the plates and descriptive text in the *Giornale*.

*Cornea.*—A. To begin with, fibro-cellular elements were observed extending from the surface of Bowman's membrane to the stratum granulosum, with which they were in intimate anatomical connection. The first case in which such elements were observed was that of a penetrating gunshot wound of the eyeball, not involving the cornea. The eyeball was enucleated six weeks after the accident, and vertical sections of the cornea showed numerous fibres passing from Bowman's membrane to the stratum granulosum. They were distributed with a regularity that indicated that they were special elements forming a part of the epithelial stratification, and not present merely accidentally.

<sup>1</sup> *Giornale della Reale Accademia di Medicina di Torino*, vol. x, year lxvii, fasciculus 4, 1904.

In a second case, enucleation was performed for lymphosarcoma of the choroid in a child aged 4 years. There had occurred a rupture of Descemet's membrane, with infiltration of blood into the cornea (*Durchblutung*). Structures, identical with those in the first case, were observed in the corneal epithelium. Fibres, which evidently formed a part of the stratum granulosum, the latter being unusually well defined, passed downwards to Bowman's membrane. In sufficiently thin sections, the basal epithelium was seen to pass up to and become continuous with the stratum lucidum, showing that the stratum granulosum was not a continuous stratum, but an interepithelial fenestrated structure.

In the next case, that of a glioma of the retina in an infant aged 6 months, bands and cells (the latter corresponding to those described by Ranvier) descended from the stratum granulosum towards Bowman's membrane.

In many cases of disturbance of nutrition, neither stratum granulosum nor fibres were manifest, but there were traces in the form of an interepithelial cell-substance in the layer of columnar epithelium. In the sarcoma case, this substance could be clearly demonstrated, as a reticulum, in horizontal sections, both at the surface of Bowman's membrane and at the level of the stratum granulosum. In the above cases, the condition of the corneal epithelium ought to be referred to a *disturbance of nutrition*, and not to actual disease.

*B.* We now come to the examination of a case of *disease of the cornea*. The subject had suffered in infancy from hereditary syphilitic keratitis; the eye was removed and examined fifteen years later. The stratum granulosum was well defined, and had club-shaped cells directed downwards and firmly implanted on Bowman's membrane as well as in intimate anatomical relationship, by denticulations, with the epithelial cells. In this case there had evidently been an arrest in the process of evolution towards what later becomes a purely epithelial structure, generally described as typical of the corneal epithelium. Such intercalary substance appears more clearly defined in very young subjects, and, as is shown in this case, particularly in horizontal sections, is not a continuous membrane, but intercalated as a free network between the epithelial cells, sometimes individually, sometimes collectively. The club-shaped cells are glia not replaced, as is normal, by epithelium, because fixed by the inflammatory change in infancy.

To recapitulate, both in disturbances of nutrition and in disease of the cornea, these fibres from Bowman's membrane

were arranged in a manner too regular to be accounted for by the supposition that they were inflammatory products. Recourse was had, therefore, to the cornea and cuticle of the *embryo* of man and of animals to see if the glia structures could be accounted for as embryological elements, and Dr. Reid had also the opportunity recently of examining the condition of the healthy *human* cornea at the *time of birth* in a case of craniotomy. In this case, the stratum granulosum was well-defined, presenting many points of similarity with the case of lympho-sarcoma; from it descended protoplasmic prolongations, which enveloped the single layer of columnar basal cells, and became continuous with a thin layer of connective tissue resting on Bowman's membrane. In horizontal sections, connective tissue cells appeared intercalated with the epithelium, as in the sarcoma case. Other sections in this case showed that, as the basal cells multiply, they push up the stratum granulosum; this, again, becomes fibrillated and becomes incorporated with the stratum corneum. In the cornea of the *calf*, the fibro-cellular connective tissue preponderates and forms a reticulum in which the epithelial cells are embedded. Superficially, the reticulum has a distinct connection with the stratum corneum. In the *young ox*, the connective tissue element is greatly diminished, and there is a corresponding increase of epithelial cells, and here and there the connective tissue has cylindrical nuclei, directed vertically. In other parts, this is represented by interepithelial substance, most abundant in the neighbourhood of Bowman's membrane, with which it is united.

To come now to the *conditions obtaining in the embryo*, there are found, in the human embryo of the *sixth week*, two distinct and separate strata in front of the crystalline lens. One of these is the cutaneous epiblast; the other is projected from the mesoblast of the ciliary region. These two layers retain their anatomical independence throughout life. The epiblastic layer of the cornea of a *fœtus* at the *fourth month* consists of a pretty uniformly distributed matrix, containing cells with cylindrical nuclei directed upwards, and supporting epithelial cell-elements irregularly distributed in its deeper part.

In the cornea of the embryo calf, at *about the third month*, glia tissue preponderates, and its cells, with their cylindrical nuclei, form a continuous layer on Bowman's membrane, with prolongations to the cells of the stratum corneum.

*Skin*.—In sections of the lower eyelid of a new born child, the glia tissue is abundant; the epithelial stratum is penetrated

by connective tissue cells, the fibres of which pass from the mesoblast to the stratum corneum. In the eyelid of a patient, aged 49, glia cells were seen resting on a basement membrane, with the formation of which they probably had to do.

In a human foetus of the fourth month, the skin of the finger shows a single layer of epithelial cells resting on a basement membrane, and enveloped in glia tissue and cells, the fibres of which pass up in some cases directly to the stratum corneum through a loose cellular structure, which probably constitutes later the stratum lucidum.

A natural dissection of the glia tissue was seen in a section of a vesicle from a case of acute cedema of the conjunctiva. Individual cells, with cylindrical nuclei, were seen to pass upwards from the basement membrane, and similar cells were seen descending from the superficial part of the vesicle. In a section from the neighbourhood of the vesicle, numerous connective tissue cells were seen passing from the basement membrane to the stratum corneum.

*Hair.*—At the point where the skin is invaginated to form the hair follicle, the glia cells appear resting on the basement membrane, and become more abundant at the root of the hair, where they become directed upwards and take part in the construction of the cortex of the hair, in a fashion similar to that of the stratum corneum forming the nail. The remaining part of the glia appears to form Huxley's and Henle's layers.

The development of the epithelial prickle-cells later on replaces the glia tissue more or less completely, as is seen in the corneal epithelium of the newborn child and in that of six months; but it leaves throughout life traces in the lower strata and in the basement membrane, which traces probably correspond to the interepithelial cell substance of Schuberg.<sup>1</sup>

The *protective function* of the stratum corneum is well represented in lesions of the corneal epithelium, also in embryonic life, when it is seen to cover the margin of the epithelium in an ulcer. If an incision be made in the conjunctiva near the limbus immediately before enucleation, and with an interval of about ten or fifteen minutes before immersion in the fixing solution, the injured margins of the epithelium are found to be covered with cells descending from the stratum corneum (which, yielding, as it does, gelatine, is recognised as a glia tissue), and also with cells from the glia of the basement membrane.

<sup>1</sup> *Zeitschrift für Wissenschaftliche Zoologie*, Band 74, Heft 2, Leipzig, 1903.

The following are the conclusions arrived at by Dr. Reid:—

1. That glia-tissue is a constant and essential element of the cutaneous epiblast.

2. That it is the active agent in the formation and development of the hair.

3. That in the process of repair of injury or alteration of the epiblast, it acts as a protective agent for the epithelium.

G. H. E.

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## Obituary.

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ROBERT STEVENSON THOMSON, M.D., D.Sc., F.R.S.E.

THE death of Dr. R. S. Thomson, in the very prime of life, has struck the medical profession in Glasgow with a sense of gloom and sorrow. His past was so distinguished, and his future so full of promise that Glasgow, and, indeed, the country generally, could ill afford to lose him, and it will be no easy matter to find one who can fill his place. We had hoped to publish a notice of Dr. Thomson's life in this number, but it has been thought better to postpone it to next issue, so as to permit of a list of his writings, which is now in preparation, being published at the same time.

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## CURRENT TOPICS.

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GLASGOW UNIVERSITY HONORARY DEGREES.—The Senate of the University have resolved to confer the honorary degree of Doctor of Laws (LL.D.) at the graduation ceremony on Tuesday, 18th April, upon the following, among others:—Alexander Crum Brown, M.D., D.Sc., F.R.S., Professor of Chemistry in the University of Edinburgh, and Sir William Whitla, M.D., L.R.C.P. and L.R.C.S. Edin., Professor of Materia Medica and Therapeutics, Queen's College, Belfast.

GLASGOW AND WEST OF SCOTLAND MEDICAL ASSOCIATION ("GLASGOW MEDICAL JOURNAL") ANNUAL MEETING.—The Annual Meeting of the Association was held in the Faculty.



Hall on 27th January, the chair being taken by the President, Dr. Robert Pollok. The Treasurer's Report was submitted by Mr. Geo. H. Edington, and was of a highly satisfactory character. The Editors' report was submitted by Dr. T. K. Monro, and, as in the case of the Treasurer's report, was approved by the meeting. The following office-bearers were elected for 1905 :—

<i>President,</i>	. . . .	DR. W. K. HUNTER.
<i>Vice-Presidents,</i>	. . . .	{ DR. ALEC R. FERGUSON. DR. JOHN ROWAN.
<i>Editors,</i>	. . . .	{ DR. THOMAS KIRKPATRICK MONRO. MR. GEORGE HENRY EDINGTON.
<i>Secretary,</i>	. . . .	{ MR. JAMES GRANT ANDREW, 12 Woodside Terrace.
<i>Treasurer,</i>	. . . .	{ MR. GEORGE HENRY EDINGTON, 225 Bath Street.
<i>Auditors,</i>	. . . .	{ DR. HAMILTON C. MARR. DR. E. H. L. OLIPHANT.

*General Business Committee.*

DR. WM. G. DUN.	DR. J. WYLLIE NICOL.
DR. P. S. BUCHANAN.	DR. JOHN W. FINDLAY.
DR. ARCH. YOUNG.	PROF. ROBERT MUIR.
PROF. CHAS. WORKMAN.	DR. R. T. HALLIDAY.

**WESTERN INFIRMARY RESIDENTS' CLUB.**—The Annual Dinner was held in St. Enoch's Hotel, Glasgow, on Thursday evening, 9th February, under the chairmanship of Dr. J. N. Marshall, Rothesay. The guests of the Club were Professor T. McCall Anderson and Sir Hector C. Cameron. There was a large gathering of old residents of the Western Infirmary. The toast of "The Club" was given from the Chair, and reference was made to the gift by the present Superintendent (Dr. D. J. Mackintosh, M.V.O.) of an album showing a number of groups of past housemen. As some of the "years" were not represented in the album, it was suggested that members who had photographic groups might communicate with Dr. Mackintosh and have the photographs reduced to cabinet size and incorporated in the album. This album, and the list of residents—showing the year of residence and the Chiefs under whom the men served—at present being prepared by the secretary (Dr. James Galbraith Connal) should make an interesting reminder of old days. The toast of "The Guests" was proposed by Dr. W. R. Sewell. "The Old Institution," proposed by Dr. Malcolm Hutton, was responded to by Dr. J. W. Arthur. "Absent Friends" was

given by Dr. W. F. Somerville. In the course of the evening, Dr. W. R. Jack read a humorous sketch on "The New Dispensary."

**ROYAL INFIRMARY RECONSTRUCTION FUND: ENTERTAINMENT AT EMPIRE THEATRE.**—In aid of this fund, an entertainment of a varied nature was given in the Empire Theatre on 14th ult. The building was crowded, and many were unable to gain admission. The audience were delighted with the programme, and further assisted the cause by purchasing programmes and flowers from the lady helpers.

**PRESENTATION TO DR. W. L. MUIR.**—At a meeting of the Executive Council of the Scottish Poor Law Medical Officers' Association, Dr. William Cullen, vice-president, presented Dr. W. L. Muir with several handsome pieces of silver plate, in appreciation of his indefatigable services as secretary of the association, a position which he has filled since its formation.

**THE TREATMENT OF THE INSANE.**—In the last of his three Morison Lectures, delivered before the College of Physicians of Edinburgh, Dr. John Macpherson said it was essential that in every large urban centre, and especially in every University city, there should be hospital wards for the treatment of acute insanity, open to the public and to medical students, in exactly the same way as the other wards of a general hospital. To these wards should be attached an out-patient department to which patients might come for advice. The want of such an establishment in every great urban centre in this country was an expression of passive cruelty and indifference which could only be described as a blot upon our much vaunted civilisation. In that respect Germany, Italy, Austria, Switzerland, and some of the States of the American Union, were far ahead of this country. Glasgow, however, was an exception to the general neglect, since the new Duke Street Hospital contained wards for acute insane cases.

Sir John Batty Tuke, M.P., in his address as President of the Neurological Society of Great Britain and Ireland, delivered in London, on 16th ult., dealt with the subject of incipient insanity. There was undoubtedly, he said, a widespread desire for reform of the lunacy laws. He held that the insanities must be submitted to treatment in their earlier stages. The tenor of our laws was towards the protection of those mentally afflicted, rather than towards their cure. The

English Lunacy Act was strictly a lawyers' Act, and stood in need of amendment on the lines of the Scottish Act of 1866. By the Scottish clause a patient could be treated privately under a medical certificate for six months. Experience showed that recovery was not difficult to obtain if treatment was applied early, and that such treatment was most satisfactory, inasmuch as not only was recovery from the immediate attack effected, but the tendency to recurrence was weakened. Glasgow had the honour of being the first city in Great Britain to carry such a scheme into effect. In 1890 the Barony Parish instituted observation wards for the reception of so-called "nervous cases." The second stage of the experiment was undertaken in 1899, when the Barony and City Parishes of Glasgow were amalgamated under the Parish Council. It was conducted under somewhat improved conditions, in wards set aside for the purpose in one of the city hospitals. Between 1899 and June, 1904, 1,345 persons were admitted, of whom 183 were sent to asylums, 86 died, and 1,052 were discharged "recovered" or "relieved." In June, 1904, the Parish Council erected for this special purpose a pavilion attached to one of its general hospitals. It contained 50 beds equally divided between the sexes. These wards had been in operation since June last, and between that date and December, 1904, 260 persons were admitted, of whom 13 died, 62 were at once sent to asylums, and 155 were discharged "recovered" or "relieved."

**INFANTILE MORTALITY IN GLASGOW.**—At a recent meeting of the Corporation of Glasgow, the Convener of the Health Committee called attention to a report by Dr. Chalmers, that the deaths of children under one year old numbered 135 during the fortnight, as compared with 155 in the preceding fortnight. It was gratifying to find, he said, that this question was being taken up by all municipalities. A charge of abnormally high infantile mortality had been made against Glasgow by a writer in a newspaper, and one of the causes given for it was vaccination. He desired to deny that, and to point out that Glasgow stood very low in comparison with other cities; moreover, infantile mortality was not confined to one specific cause. In 1904, the death-rate of children under one year was 145 per 1,000 in Glasgow, 167 in Leicester, 186 in Dewsbury, 187 in Manchester, and 196 in Liverpool and in Birmingham.

**THE FEEDING OF SCHOOL CHILDREN.**—At the Conference

on School Hygiene, held in London last month, Dr. A. K. Chalmers, Medical Officer of Health, Glasgow, read a paper on "The Physical Inspection of School Children in Relation to Public Health Administration." Summarising his paper, Dr. Chalmers suggested:—1. That in all communities a section of the population fails to participate in the hygienic advances of recent years, and that associated therewith there is much impaired health and defective physique, which means industrial inefficiency. 2. That the limited measurements of school children presently available appear to indicate (*a*) that their physical development is related to an economic standard of the family-life, which may readily be expressed; (*b*) that their nutrition is similarly graded; and (*c*) that their mental efficiency as estimated by the masters falls into line with both. 3. That this lowering of the mental and physical condition of childhood tends to the production of inefficiency in the adult, from which again the vicious cycle is begun. 4. That much educational energy is meanwhile misspent in endeavouring to educate children who are physically unfit, as evidenced by the small proportion of underfed children who reach a reasonable standard of proficiency, according to the masters' estimate. 5. That, in order to assist in preventing the production of industrial inefficients, food, and by implication the organised feeding of school children in certain districts, is essential. 6. That the most reliable way of ascertaining the distribution of underfed children is by a systematic inspection of schools.

**THE PURITY OF COD-LIVER OIL.**—The recent prosecutions for adulteration of cod-liver oil, the furore which these have created among dealers in this commodity, and the researches which have resulted, are of great interest to medical practitioners, who prescribe large quantities for its supposed therapeutic value. The subject was brought before the Scottish Section of the Society of Chemical Industry at its meeting in the Technical College, Glasgow, on 31st January, when a paper was read by Messrs. Tatlock and Dunlop on the examination of various fish oils. It would appear that prescribers can never be satisfied that pure cod-liver oil is obtained, as the general conclusions drawn from elaborate experiments are that the oils from the livers of cod, ling, skate, and other fish are quite indistinguishable by chemical or physical tests. Considerable proportions of shark and dogfish-liver oil can be added to cod-liver oil, without the certainty of detection. The tests considered of primary

importance are the iodine-value, the saponification-value, and the percentage of unsaponifiable material. Of secondary value are the refractive power, the specific gravity, the specific rotatory power, &c. The interesting question for prescribers is, whether in view of the inability of analysts to determine any difference between these various liver oils, there can be any therapeutic difference, and whether the term cod-liver oil should not give place to fish-liver oil. The belief in the exclusive virtue of the "oil from the fresh-liver of the cod" would seem to be quite fallacious.

JAPANESE ARMY SURGEONS AND NURSES.—Sir Frederick Treves, Bart., in his latest book, *The Other Side of the Lantern*, pays some well-merited compliments to the medical department of the Japanese army during the war. Through the kindness of officials, Sir Frederick was able to see all that was to be seen in connection with the Army Medical Service, and he speaks highly of the work in every department, and more especially of the Japanese Red Cross Society, "the most remarkable and efficient of its kind in the world." The nursing, too, is very perfect. Coincident with the publication of Sir Frederick's encomiums, comes the report from the front giving evidence of an astonishingly low rate of mortality among the troops. According to returns obtained from the chief surgeon with General Oku's army, there have been only 40 deaths from disease in his entire command since its landing on 6th May last. Of 24,642 cases treated up to 1st December, 18,578 recovered, 40 died, and 5,609 were sent to Japan. It is believed that these figures are unequalled in the history of warfare.

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#### NEW PREPARATIONS, &c.

"SOLOID" OF "HEMISINE" AND EUCAINE (London: Burroughs Wellcome & Co.).—This preparation is intended to furnish a means of producing local anæsthesia and bloodlessness. The local anæmia tends to limit the risk of absorption of the anæsthetic, and it is claimed for the present preparation that the suprarenal gland principle does not decompose when kept in "soloid" form. The formula is—"Hemisine," 0·001 gm.; sodii chloridi, 0·8 gm.; eucainæ hydrochlor., 0·2 gm. One "soloid" dissolved in 10 c.c. of water gives a solution of "hemisine," 1 in 10,000; and eucaine 2 per cent. Of this, 5 to 50 minims may be injected at one time.

"TABLOID" REDUCED IRON COMPOUND AND "TABLOID" REDUCED IRON AND RHUBARB COMPOUND (London: Burroughs Wellcome & Co.)—The first tabloid contains:—

Reduced iron, . . . . .	gr. 2 (0.13 gm.)
Extract of hyoscyamus, . . . .	gr. 1 (0.065 gm.)
Extract of nux vomica, . . . .	gr. $\frac{1}{2}$ (0.032 gm.)
Oil of caraway, . . . . .	min. $\frac{1}{4}$ (0.015 c.c.)

In cases with indigestion and constipation "Tabloid" Reduced Iron and Rhubarb Compound may be used. This contains:—

Reduced iron, . . . . .	gr. 2 (0.13 gm.)
Extract of hyoscyamus, . . . .	gr. 1 (0.065 gm.)
Extract of nux vomica, . . . .	gr. $\frac{1}{2}$ (0.032 gm.)
Compound rhubarb pill, . . . .	gr. 1 (0.065 gm.)
Oil of caraway, . . . . .	min. $\frac{1}{4}$ (0.15 c.c.)

Both products contain the same doses of reduced iron and extract of nux vomica, and both may be therefore ordered for a patient with a direction to take one or other, or both, in such proportions as from time to time may meet the digestive difficulties of the case. *Dose*: One to two, swallowed with water, twice or thrice daily, with or after food.

## MEETINGS OF SOCIETIES.

### GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1904-1905.

MEETING I (*continued*).—7TH OCTOBER, 1904.

*The President*, DR. DAVID NEWMAN, *in the Chair*.

#### IV.—CASE OF HYDROCEPHALUS IN WHICH PERITONEO-MENINGEAL DRAINAGE HAS BEEN CARRIED OUT.

By DR. J. H. NICOLL.

Within the past two years two other surgeons have, independently, brought forward this measure as a possible means of effectively treating hydrocephalus. Previously, I had carried

out the idea in a number of cases. In the *Glasgow Hospital Reports*, 1899, in a paper on "Spina Bifida," occurs the following:—"In the treatment of hydrocephalus, I have employed several methods. Of their comparative values I have not been able to form an opinion sufficiently decided for publication." Of the five methods given, method (c) is described as "the establishing of a drainage channel from the spinal canal (at the site of, and during the operation for, spina bifida) into either the peritoneal cavity or the cellular subcutaneous tissue, or both. This may be done by a drain which is absorbable after a time, or by a drain which is removed by secondary operation after a period of weeks or months."

In a paper on "Spina Bifida" in the *British Medical Journal* for 1898, vol. ii, dealing with the allied subject of the treatment of hydrocephalus, I stated—"On this point I should wish to reserve judgment," and, after a reference to cases treated by drainage from the spinal canal, "there remain certain further measures, the value of which I am at present testing as suitable cases occur, but concerning which I am not at present in a position to express a positive opinion. These measures are—(a) The establishing of a drainage channel from the spinal canal . . . into either the peritoneal cavity or the cellular tissue, or both; (b) drainage of the cerebral ventricles, either externally or into the meninges (Watson Cheyne); (c) application of various solutions to the interior of the cerebral ventricles."

Further, from the paper first mentioned (*Glasgow Hospital Reports*, 1899), the following paragraph may be quoted:—"Into the vexed question of the route or routes by which hydrocephalic fluid reaches the sac of a spina bifida it is not necessary here to enter. It is sufficient to re-state the fact that in certain cases of spina bifida with hydrocephalus it is possible, by raising the child's head and shoulders after the spina bifida sac has been opened, to drain away as much fluid as may be deemed safe, the amount being judged by the tension of the fontanelle."

Such drainage I have frequently continued for a week at a time by a tube carried into the dressings. To divert the fluid from the abnormal cerebrospinal cavity into the normal (and, presumably, absorptive) peritoneal cavity, and thus avoid the risks of external drainage, seemed feasible; and, further, to extend the practice of the idea to cases of hydrocephalus without spina bifida naturally followed. The pathogeny and regional morbid anatomy of "congenital" hydrocephalus are as yet ill-understood. Even if it be assumed that "congenital" hydrocephalus is always of the

"internal" variety, and further that, as in "acquired" hydrocephalus, the cause is a blocking of the veins of Galen, the question of the origin and nature of the affection is by no means divested of difficulties. What, for instance, is the connection between congenital internal hydrocephalus, originated in an obstruction of the veins of Galen, if that be so, and the fluid in a lumbar spina bifida—two conditions so frequently co-existent? Does the fluid from the lateral ventricles escape into the meninges through the foramina in the roof of the fourth ventricle? Or are all cases of spina bifida in effect cases of unrecognised syringo-myelocoele? Or is the fluid distending the spina bifida sac cerebrospinal fluid in the meninges, forced out of the skull into the spinal canal by the pressure of the brain expanded by the presence of fluid in its ventricles, which fluid has no connection whatever with that in the meninges? Questions such as these go to show the complexity of the subject.

Meantime, though it may not be possible to cure a cirrhosis of the liver, it is considered not bad practice to get rid of the resulting ascitic fluid, and there would appear to be no valid reason against similar practice in hydrocephalus. The prevention of damage, and even fatal pressure, by the ascitic fluid not infrequently gives time for spontaneous cure of the cirrhosis. There is reason to believe that if the affection be taken in hand sufficiently early, a like result may be obtainable in some cases of hydrocephalus. Indeed, the evacuation of the fluid by tapping or by drainage constitutes a line of practice in hydrocephalus which has the sanction of the current text-books.

The fact that the idea of diverting the excess fluid of a hydrocephalus into the abdomen for absorption has occurred independently to three surgeons does not establish its practice in surgery. My object in bringing this case before the Society is not to demonstrate any benefit derived from the operation, which was but recently carried out. I have never put forward any claim (*vide* the extracts quoted above) on behalf of the measure. I do not do so now, for, although I have carried out such a measure in a number of cases, I have not watched them sufficiently long to be able to form a decided opinion as to permanent cure. The measure has been included in one, at least, of the most recently published text-books, and my object in bringing forward this case is to indicate the opinion that, if the idea is to be fairly tested at all, operations which are efficient must be performed to secure beyond reasonable doubt actual communication between the two cavities. To do so it



is, I believe, necessary to carry out the following measures:—  
(a) Lumbar laminectomy, including two vertebral arches;  
(b) removal of a lumbar transverse process on one (or both) sides of the laminectomy; (c) creation of a free opening through the muscles into the peritoneum; (d) the use of a large drainage-tube—this may be of decalcified bone to be left to absorb—or of rubber or glass, buried, and left to be removed by secondary operation after some weeks; or (e) the fixing by suture in the spinal meninges of the free margin of the omentum (as in the present case) brought through from the abdomen, on the principle of the operative treatment recently introduced for ascites.

For the treatment of “internal” hydrocephalus, the idea of peritoneo-meningeal drainage involves an additional operation (not, as yet, at least, performed in this particular case), viz., the establishing of a communication between the cerebral ventricles and the meninges—either by Watson Cheyne’s method (*vide supra*) or in the region of the fourth ventricle. This I have done. The difficulty here, again, as in the peritoneo-meningeal operation, is the securing of an efficient aperture of communication.

My apologies are perhaps due to the Society for occupying the time of a meeting with matters which are, admittedly, so much “in the clouds.” In view of the attention which the idea has independently secured, and of the fact that the measure has attained text-book rank, it has seemed to me admissible to call attention to its present problematical position.

*Dr. Dunlop* enquired if the child’s head had diminished in size.

*Dr. Lindsay Steven* said he wished to ask *Dr. Nicoll* how he expects to keep the peritoneo-meningeal drain open. If a small portion of the spinal column is removed and a piece of omentum placed in it, he would expect the opening to get closed with fibrous tissue.

*Dr. Newman* said he was interested in this condition many years ago. He made a number of *post-mortem* examinations in such cases, and he always found obstruction in the veins of *Galen*. He would like to ask *Dr. Nicoll* if his patient has any tubercular disease. He agreed with *Dr. Lindsay Steven* that the peritoneo-meningeal opening is likely to become filled with fibrous tissue.

*Dr. Nicoll*, in reply to *Dr. Lindsay Steven* and *Dr. Newman*, said he fully appreciated what they had said with reference

to the difficulty of establishing an efficient drainage channel between the two cavities. It was just that difficulty which had led him to bring the matter before the Society. The idea had been put forward by two other surgeons since he first carried it out, and had now attained text-book rank. He wished to again emphasise the fact that he had never made any claim for results obtained. He did not do so now. What he wished to draw attention to in bringing up the matter was the difficulty in establishing efficient communication. The same difficulty existed in the case of Watson Cheyne's operation (referred to above)—the establishing of a communication between lateral ventricle and arachnoid space. In the operation of peritomeo-meningeal drainage—whether drainage-tube, omentum, or other means of drainage was employed—it was essential to have a free channel established, and to this end he had always removed both laminae and transverse process. If the idea was to be further tested in practice, it should be put in execution on thoroughly efficient lines.

V.—CASES OF MASTOIDECTOMY, WITH PRELIMINARY OCCLUSION OF INTERNAL JUGULAR VEIN.

BY DR. J. H. NICOLL.

The two cases shown are children of tubercular history, who suffered from chronic otitis media, followed by infection of the mastoid antrum and by extensive cario-necrotic bone disease in the mastoid. The jugular vein was tied in the neck in both cases, and subsequently an extensive removal of the diseased bone carried out, in the course of which the sigmoid sinus was freely exposed and left largely denuded of bony covering. The mastoidectomy cavity in each case has been covered in by a secondary operation, the only aperture at present existing being through the posterior wall of the external and middle ear, which has been removed.

A recent case is that of a girl of 19, seen two months ago, suffering from otitis, with mastoid mischief and, presumably, sinus thrombosis. The jugular vein was tied in the neck, and thereafter the mastoid cavities opened up in the usual way. Evidence of sinus thrombosis being clear, the vessel was opened, the clot cleared out, and the opening treated by packing. The patient is now well.

Occlusion of the jugular vein in cases of septic sinus thrombosis is now well-established surgical practice. The authority of Horsley, Ballance, Lane, Barr, and others, has recently been reinforced by the experience of many operators.

Further, in the view of at least one of these authorities,<sup>1</sup> it is good practice, having exposed the sinus and found presumptive evidence of thrombosis, to occlude the jugular vein before opening the sinus. That position, it need hardly be noted, is one somewhat in advance of that of many of the current works on general surgery and otology. Being familiar with much of the evidence on which Dr. Barr founds, I find it difficult to imagine the occupation of any position short of that in the matter.

For some time it has been my practice in certain cases to ligature, or otherwise occlude, the internal jugular vein in the neck—not only before opening the sinus, but before beginning the operation of mastoidectomy. The cases brought forward this evening are so far typical in the matter.

At the recent meeting of the Otological Society of Great Britain, held in Glasgow in May of this year, I showed a number of the cases in which this had been done. For details of these, reference may be made to the *Transactions of the Otological Society* for the current year (pp. 72, 73, *et seq.*), and also to a further paper on the subject in the *Scottish Medical Society* for last month (September, 1904).

The time at my disposal will not permit of treatment of the subject in detail. It may suffice to quote, from the papers referred to, the conclusions which appear to be warranted from the results in a considerable number of cases. These are as follow:—

1. Preliminary ligature of the jugular vein is an operation of trivial risk. As the primary step in the operative treatment, it is performed with clean hands and instruments. Ligature of the jugular, on the other hand, undertaken towards the end of a mastoidectomy, when infective thrombosis has been discovered in the sinus, or performed hurriedly after accidental wounding of the sinus, is an operation which, performed with contaminated hands and instruments, carries grave risks of septic infection of the vein and the cellular planes of the neck.

(Excision of the jugular vein constitutes an operation of somewhat greater severity. It is necessary in cases in which on exposure of the vessel it is found that the infective thrombosis, originating in the sinus, has extended down the channel into the vein. For this the operator must be prepared, even in cases in which the symptoms have given no indication beforehand of the condition of matters revealed by the exposure of the vein.)

<sup>1</sup> Barr, *Manual of Diseases of the Ear*, third edition, p. 313.

2. Preliminary occlusion of the jugular vein in cases in which there is reason before operation to suspect possible infective thrombosis of the sinus constitutes the patient's main chance of recovery. To disturb the walls of a thrombosed sinus, to palpate it for evidence of thrombosis, and, finally, to open it (when necessary) and break up the purulent thrombus in removing it with the spoon, over a patent jugular channel, sucking in *débris* with each inspiratory effort, cannot be regarded as sound surgery.

3. Preliminary occlusion of the jugular vein in cases (most often in children) in which there is reason to suspect tubercular caries in the mastoid, permits the performance of a much more radical mastoidectomy than can be attained in cases where a patent jugular vein converts an accidental wound of the sinus from a comparatively trivial incident to an accident bearing serious disadvantages and grave risks.

Amongst the former is the limiting of the scope of the operation, owing to the welling of blood with each expiration or the presence of the gauze plug inserted to check the flow. Such limitation is unfortunate, because cases of tubercular disease in the mastoid commonly return repeatedly, unhealed, on account of remaining or extending areas of caries. Anything which hinders the operator in his endeavour to radically extirpate the caries renders further operation in the future the more likely.

Amongst the latter need not be placed fatal hæmorrhage during operation, which ought to be preventible, or air embolism, which must be exceedingly rare. Serious, and even fatal, hæmorrhage, however, during the reaction from operation collapse is not unknown. In such cases the violent strain of vomiting displaces the gauze plug placed to close the sinus.

Wounding of a freely exposed sinus may occur during the re-insertion of the packing in the mastoidectomy cavity at one of the subsequent dressings of the case, and this is specially apt to occur in the case of a violently struggling child (*vide* case shown to the Otological Society, *loc. cit.*). The advantages of preliminary ligature are as marked here as during the operation.

More serious and more common, if less obvious at the time, is the aspiration into the lungs and general circulation of tubercular, pyogenic, and putrefactive *débris* from antrum, attic, and cario-necrotic bone. This may occur at the time of the operation when the sinus is wounded, or may continue during the after-course of the case, in either event with serious or fatal result.

4. The incision necessary for ligature of the jugular vein may be utilised for the removal of infected cervical glands.

*Mr. Edington* said he would ask *Dr. Nicoll* if, in cases of wounds of a sinus, packing the neighbourhood of the sinus with iodoform and boracic powder, as advised by *Sir Wm. Macewen*, is not sufficient to control hæmorrhage.

*Dr. W. S. Syme* said—With reference to the two children shown by *Dr. Nicoll*, in whom the internal jugular was tied previous to the operation on the mastoid, I imagine *Dr. Nicoll* expects adverse criticism of this procedure. If he does not, he will, at anyrate, get it, and especially, I think, from otologists. To take, first, those cases in which he recommends that the jugular should be ligatured as a preliminary to the opening of the antrum where sinus thrombosis is suspected. It has no doubt occurred to him, as to me, to suspect this complication, and yet to find on exposing the lateral sinus merely a perisinous abscess, with, it may be, an inflammatory condition of the wall, but without thrombosis, and, furthermore, to obtain complete relief from the symptoms without interference with the sinus. In such a case I should certainly doubt the advisability of ligaturing the jugular. Where one can be sure of existing sinus thrombosis, say from feeling the clot in the jugular at the angle of the jaw, there need, I am of opinion, be no hesitation in tying the vein. In cases of caries of the mastoid in children, *Dr. Nicoll* speaks lightly of the ease with which the jugular may be tied; and no doubt the actual technical part of the operation is easily learned, but this is of secondary importance to the physiological result of occluding the vessel. I cannot help thinking that the internal jugular is of some use in the bodily economy, and, even barring those cases in which the opposite jugular and the collateral circulation are imperfect, I should certainly fear interference with the mental development as a result of this operation in the growing child. It would be interesting to hear from a physiologist what actually occurs in the intracranial circulation as a result of ligature of the jugular. I imagine it is not at all certain that the sinus is occluded in all cases. Rather is it possible that a vortex, so to speak, is formed, and the current of blood changed in its course. So that the risk of hæmorrhage from accidental opening of the sinus during the evacuation of the mastoid is still present. The danger of wounding the vessel during the subsequent dressings should very rarely occur if reasonable care is exercised. So that, with reference to those cases placed in the first two of the three categories

mentioned by Dr. Nicoll, I strongly protest against the preliminary ligature of the internal jugular.

Dr. Nicoll, in reply to Mr. Edington, said that, with reference to the checking of hæmorrhage from a wounded sinus, he had had some experience of iodoform and boracic powder packing. As assistant surgeon to Sir Wm. Macewen's wards for some nine years, as consulting surgeon to the Ear Hospital, at the Children's Hospital, and in practice, he had frequently had occasion to make use of it, often with benefit. It was by no means always efficient, however, and in the case of a wounded sinus in a child, for instance, who screamed himself blue in the face at each dressing and sent blood welling into the mastoidectomy cavity in alarming quantity, powder packing was impracticable unless one was prepared to administer an anæsthetic for each dressing. As a means of obviating this necessity, preliminary ligature of the jugular was helpful. In reply to Dr. Syme, Dr. Nicoll said that Dr. Syme did not object to ligature of the jugular where we could be sure that sinus thrombosis did actually exist. Dr. Nicoll's view was that by the time we were sure, ligature of the vein would be useless. To wait till the thrombus could be felt in the sinus or vein, then to run the risk of dislodging part of it by the act of feeling, and, finally, to break it up in removing it—all the time over a patent jugular channel, aspirating material into the pulmonary circulation with each inspiration—Dr. Nicoll could not regard as sound surgery. Dr. Syme referred to cases in which, in operating on a mastoid cavity, the sinus was exposed and found to be inflamed, but not thrombosed, and he thought ligature of the vein inadvisable in such. That was rather a criticism of ligature as such than of preliminary ligature. The cases which Dr. Nicoll had in view were cases in which before operation there was reason (from symptoms present) to suspect the existence of sinus thrombosis. Taking the cases instanced by Dr. Syme, however, Dr. Nicoll was even there of opinion that ligature was sound practice despite the fact that certain cases of inflamed sinus recovered without interference with sinus or vein; for it had been his lot to see a number of such. In certain of them, because no solid thrombus could be felt in the exposed sinus, the vessel had not been opened, and *post-mortem* the condition found had been this—the wall of the sinus next the mastoid abscess was inflamed, as Dr. Syme indicated. On its inner aspect was a layer of infective thrombus. The opposite wall was healthy, and because the thrombus had not solidly occluded the entire lumen, it had been overlooked, with fatal

effect. The palpation of such a partially occluded sinus over a patent jugular vein appeared to be an even more dangerous procedure than palpation of a solidly thrombosed sinus. With reference to the fact that there were other channels communicating with the sigmoid, Dr. Nicoll did not see that their existence, and the fact that they are topographically incapable of being surgically occluded, made it any the less desirable that the main channel should be closed before a thrombus was broken up in the sinus, and referred to a recent case, seen with Dr. Barr, in illustration.

VI.—SOME NOTES ON THE TREATMENT OF TUBERCULOUS  
GLANDS IN THE NECK BY INCISION.

By MR. G. H. EDINGTON.

Mr. Edington's paper will be found as an original article in our issue for November, 1904, at p. 344.

*Dr. Nicoll* said—Mr. Edington has referred to the stretching of the scar in the neck in the cases of ligature of the jugular shown earlier in the meeting by him (*Dr. Nicoll*). *Dr. Nicoll* thought the scar had stretched in one of the cases at least. He was of opinion that the fact of a neck scar stretching or not depended on the patient, and not so much upon the situation and extent of the incision made. In the case of a rickety child, such as the small boy referred to by Mr. Edington, the movements were apt to produce stretching of any scar in the neck, whereas, in the case of a young lady, who would lie for weeks with the head fixed by bandages between sand pillows, the incision might be placed in any situation without fear of stretching of the scar. Mr. Edington might be right in his view as to the effect of the platysma on such a scar. If he were, it was a "large order," amounting as it did to a revolution in the accepted teaching and practice in the matter of the ligature of the large vessels of the neck *secundum artem*, the operation carried out in these cases, the incision being placed, according to rule, on the anterior border of the sterno-mastoid. In removing glands from the neck, a good general rule was to place the incision in one of the natural skin creases and to "tunnel" out the glands with the finger. By placing an incision of 1 to 1½ inch in the middle of the neck it was possible to remove through it by "tunnelling" from it all the groups of glands which Mr. Edington had mentioned. The obvious criticism on such practice was that by it one could not be certain of removing

all the glands, and the reply to that criticism was that neither could one if one laid the patient's neck open from mastoid to clavicle.

*Mr. Arch. Young* did not agree with the views of *Mr. Edington* upon the most suitable incision for dealing with tuberculous glands in the neck. The transverse incision might in chosen cases prove itself satisfactory, though it is probable that much more important than actual direction and line of incision is the accomplishment of aseptic healing and accurate apposition of wound edges. As regards the treatment of tuberculous glands, where these are obviously softened (and known to be so prior to operation), and particularly where considerable tuberculous "abscesses" exist, *Mr. Young* advocated the employment of a curved incision, allowing of full exposure of the whole cavity of the abscess and free and complete access to its every recess and ramification. By this means all tuberculous material can be removed, and this should be rigorously carried out. Thereafter the flap may safely be sutured along its whole margin, and by carefully applied external pressure the walls of the often extensive and complex cavity may be brought into intimate contact, early and satisfactory healing being the result. Illustrative cases were referred to. Finally, *Mr. Young* completely disagreed with *Mr. Edington's* advocacy of the treatment of such abscesses by attempting the curetting of their walls after evacuation of the contents through a minute aperture made with a tenotome.

*Mr. Edington*, in reply, said he did not approve of "tunnelling" as advocated by *Dr. Nicoll*. He believed the proper course was to expose the danger, *i.e.*, the jugular vein, as then the operator would know exactly where he was. With regard to *Mr. Arch. Young*, he was afraid that *Mr. Young* had misapprehended him. Although the matter was outside the scope of the paper, he would say that, if the glands were palpably softened so as to suggest the possibility of rupture occurring during removal, he would not attempt excision. In such a case he would content himself with puncture and scraping, as in an ordinary tuberculous abscess. Then, if necessary, excision should be done at a later date. He did not think that opening a tuberculous abscess by raising a flap was good, as the rawed tissues were likely to become infected. While agreeing with *Dr. Newman* as to the value of the finger as a surgical instrument, he preferred clipping with scissors when there was much matting, as the finger might, in such a case, tear the vein.



## OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1904-1905.

MEETING III.—21ST DECEMBER, 1904.

*The President, DR. J. K. KELLY, in the Chair.*

## I.—SPECIMENS.

A. BY DR. J. M. MUNRO KERR.

Dr. Munro Kerr showed a uterus which had been removed the previous day from a patient eight months pregnant on account of carcinoma of the cervix. The patient, a ix-para, was admitted to the Maternity Hospital with the history of having been in labour for two days. The os was half dilated, but the head of the child was prevented from passing through the pelvis by reason of the tumour in the anterior lip of the cervix. The child was considered to be dead. Cæsarean section was performed, and a dead child extracted. Thereafter the broad ligaments were ligatured and cut. The uterus, however, was removed *per vaginam* after its connections with the bladder had been separated. This was done with the object of preventing septic infection of the peritoneum. There was no difficulty in removing the uterus.

B. BY DR. J. K. KELLY.

1. Uterus, with large cystic myoma, filled with sanious fluid, growing from fundus.
2. Dermoid cyst of ovary in the base of which was found a lipoma and some bony tissue.
3. Ovarian cyst.

C. BY DR. JOHN EDGAR.

*Mulberry calculus removed from the left ureter by abdominal section.*—It measured three-fourths of an inch in length, and five-eighths of an inch in each of the other two directions. It was situated at the side of the pelvis, slightly below the normal site of the ovary. After removing it, the opening in the ureter was closed by interrupted catgut sutures. In case leakage of urine should occur, an opening was made

through the posterior fornix into the pouch of Douglas, and a strip of iodoform gauze was introduced. Leakage did occur on the third day, but it ceased spontaneously ten days later, and patient made an otherwise uninterrupted recovery.

D. BY DR. ROBERT JARDINE.

Dr. Jardine exhibited two drawings illustrating traumatic keratitis of the newborn. In one, the bands of opacity were in the vertical axis of the eye, and in the other in the transverse. The first was the most usual.

## II.—DISCUSSION ON THE TREATMENT OF UTERINE PROLAPSE.

*Dr. W. L. Reid*, in introducing the discussion, said—I was induced to suggest this discussion on the treatment of uterine prolapse and accede to the request of the Council to open the discussion to-night by the fact that I have often been in doubt as to the best manner of treating a particular case, and I have tried a number of the plans and modifications of plans suggested by different practitioners. Now, I have a fairly clear idea of what is most suitable in the way of treatment, and am naturally anxious to compare the experience of my brethren with my own.

I should like to narrow the limits of the discussion, so as to make it as profitable as possible.

First, let me say that we are to speak of chronic cases of prolapse only; second, that we must differentiate between slight cases and severe ones in speaking of treatment.

I do not refer to prophylaxis, although I may say in passing that its importance cannot be over-estimated. The perineum should be carefully sutured when torn, and causes, such as sepsis or too early rising after labour, which may lead to subinvolution and displacements, should be most carefully attended to.

Probably we are all agreed that in moderate cases of prolapse, where the perineum has been little destroyed or dilated, a properly-fitting pessary, with attention to the bowels and a fair amount of rest, are all that is necessary. Setting these cases aside, difficult questions arise as to what are the limits of the various mechanical appliances and operations in an ascending scale of difficulty, danger, and efficiency. For cases other than minor ones, I would dismiss at once such means as long-continued rest, hot or astringent douches,

general tonics, massage, and electricity, as being little likely to do more than passing good. There are cases in which the perineum is dilated and where the older forms of pessary, such as the Hodge, will not stay in position, but in which an Albert Smith with a strong sacral curve will serve very well by keeping the uterus in a state of anteversion, and so throwing its long axis at right angles to the pelvic cavity. Again, so long as the upper reach of the vagina is wider than the vulvar orifice, a strong watch-spring pessary will retain the parts in position. But the rubber covering of the watch-spring pessary is apt to give rise to great and offensive leucorrhœa in spite of the use of an aseptic vaginal douche. Where the perineum is much dilated, the most efficient pessary I know is Herman's modification of a Hodge, in which the lower bar of the latter instrument is turned sharply forwards so as to rest against the inner surface of the pubic arch. Many women who object to operation are kept in comparative comfort by its means.

I deliberately keep out of consideration all pessaries in the shape of balls, cups, and stems, and even jointed ones, such as Zwanke's, as being either inefficient or dangerous, or both. Neither do I consider the means suggested to retain the uterus by thickening the broad ligaments, such as the injection of alcohol or paraffin, because I have no personal experience of them.

We now come to distinctly surgical means, and I simply mention them and offer an opinion on their value, and it is precisely here where the discussion may be of most value. As it is generally admitted that destruction of the perineum is an important factor in the production of prolapse, it seems natural to suggest its restoral. But when the patient gets out of bed after this has been done, the uterus comes down and slowly but remorselessly redilates the restored parts. This may sometimes be slowed or even prevented by wearing a pessary which produces anteversion of the uterus. As the uterus is often subinvolved and heavy, amputation of the cervix is practised with the view of reducing its weight and exciting absorption. But this alone will not suffice, although this added to a restoration of the perineum does in a certain percentage of cases.

Complete hysterectomy has been practised in severe cases, but with little good result, as, although the uterus cannot come down when it is not there, the surrounding organs which formerly accompanied it in its descent still persist in forming a hernial protrusion.

Various methods of fixing the fundus to the anterior abdominal wall have been practised under the names of hysteropexy, ventral and abdominal fixation, and where the uterus is not very heavy and fixation firm, this does retain the uterus, but it does not cure the cystocele, which is a frequent accompaniment of such cases. Operations for fixing the uterus from the vagina have been pretty well given up, so far as I know, owing to after-discomfort and risk in the event of pregnancy.

The Adams-Alexander operation for shortening the round ligaments is sometimes satisfactory, and I have often performed it, but it is frequently a difficult operation, and its chief *raison d'être*, that it did not require opening the peritoneal cavity, is now done away with in these days, when pretty complete safety can be secured by 'thorough antiseptic precautions.

Wylie's, Mann's, and Dudley's operations for intra-abdominal shortening of the round ligaments by kinking them up seem to me to be more difficult and no more efficient than a thorough abdominal fixation.

Where the uterus is very heavy, abdominal fixation may be wisely modified, according to Noble's plan, by a supravaginal hysterectomy with fixation of the stump to the abdominal incision.

Shortening the utero-sacral ligaments from within the abdomen may help to make a ventrofixation effective, but could not, I think, be trusted alone. Of the method suggested by Freund, for the case of an aged woman with bad prolapse in which the parts are supported by the placing of silver wire all round the vagina at successive levels, I know nothing. Complete closure of the vagina is never safe and never necessary.

With regard to severe cases of prolapse complicated with cystocele and rectocele, I agree in the main with Howard Kelly's conclusion that an anterior and posterior colporrhaphy, with amputation of the cervix uteri, is the most satisfactory and usually quite successful treatment, and that where this threatens to fail the addition of abdominal fixation is all that is required. But I differ a good deal from him in the details of the operation. First of all, he amputates the cervix before removing the mucous membrane from the anterior vaginal wall. This makes the latter more difficult, because the cervix is not present to be used for putting the base of the bladder on the stretch. He removes a piece of mucous membrane only one to one and a half inch broad, because if more is removed

"the suturing of the posterior vaginal wall in the next step will be difficult." I find that the result is not thoroughly satisfactory unless a piece from two to three inches in breadth is removed, and by the method of suture of the posterior wall, which I shall immediately describe, there is no after difficulty in its performance. Again, Dr. Kelly removes the cervix near the level of the os internum, two to two and a half inches from the os externum, and has to tie the uterine artery. I find that amputation just above the vaginal roof is sufficient, and much easier. Lastly, he removes two small lateral triangular flaps from the posterior vaginal wall, and thus has two rows of sutures. I remove one large central flap, and have only one. I practised this method twenty years ago, on the assumption that a lateral wound was less likely to allow of percolation of fluids from the vagina than a central one, but with careful vaginal douching through a soft rubber tube I found that there was no difference as regards results. Dr. Kelly states that anterior colporrhaphy is only needed in extreme cases, but I have found that even a slight cystocele gives the patient the impression that the womb is coming down again, and, in spite of explanation, the idea keeps her miserable.

My present view of operative treatment is this:—Where pessaries have not been satisfactory, where there is little or no cystocele, where the prolapse is accompanied by retroversion, and especially where there are adhesions, I often perform a ventrofixation pure and simple, using silk ligatures, rawing the peritoneal surface of the uterus, and taking a fairly large bite of the subperitoneal tissues in the abdominal wall. Out of fifteen such cases operated on during the last three years, only one failed, the attachment to the abdominal wall giving way within three months. Where the prolapse is extreme, with cystocele and rectocele, and the uterus large and heavy, I perform at one sitting an anterior and posterior colporrhaphy, supravaginal amputation of the cervix, and a thorough restoration of the perineum. It would be tedious and probably unprofitable if I were to try to give you simply in words details of these operations; suffice it to say that I take a large oval piece out of the anterior vaginal wall and a large triangular piece out of the posterior one, the apex being only a little way below the level of the cervix. The result of these proceedings is the temporary almost complete closure of the vagina, and the formation of a large block of perineum. After the contraction incidental to healing has taken place, the vagina comes to be almost normally patent.

Where the uterus is not heavy, I omit the amputation of the cervix.

Of thirty such cases, I do not know of one which has failed, but some of them I have lost sight of immediately after convalescence.

*Dr. Edgar* had listened to *Dr. Reid's* paper with much pleasure and profit. He rarely performed ventrofixation of the uterus in cases in which pregnancy might occur later. In such cases, he always sutured the fundus uteri to the peritoneum at the abdominal incision (sero-serous union). Where there was no possibility of pregnancy occurring, he sutured the fundus to the rectus muscle and fascia (sero-fibrous union). In a considerable number of cases in the child-bearing period of life, where the prolapse was complicated with retroflexion of the uterus, he had performed a modified vaginal fixation of the uterus with gratifying results. After opening into the utero-vesical pouch through the anterior vaginal fornix, he passed a silkworm-gut suture through the vaginal wall and peritoneum on one side, then through the body of the uterus a centimetre above the flexion, and finally through the peritoneum and vaginal wall on the other side. This suture he left in for six weeks. He combined this operation with colporrhaphy and such other operation as might be necessary. Several cases had subsequently passed through pregnancy and labour at full term without any complication. In none of them did the retroflexion recur, but in one the uterus prolapsed once more.

After colporrhaphy and perineorrhaphy he always ordered the bowels to be moved on the third morning, and, except where there was some special indication for it, he did not use the vaginal douche. It was remarkable how seldom these wounds failed to heal by first intention. Stitch abscesses were extremely uncommon—much more so than in the case of skin wounds.

*Dr. Scott Macgregor* said—In all my cases of prolapsus uteri I prefer to use instrumental treatment previous to operating. I find that patients, as a rule, do not readily consent to an operation, but if you begin by trying a pessary, and should this fail, one can always fall back upon an operation. For this purpose I use a round vulcanite pessary, and in several instances it has answered admirably, where at first sight an operation seemed the only hope.

In my first cases of hysteropexy, I followed the methods of

Howard Kelly in attaching the uterus to the peritoneum only. This I ultimately abandoned, and for some time past have passed the sutures of attachment through peritoneum, muscle, and fascia; the results have been quite satisfactory.

Following the operation, cystocele is quite a common occurrence, and I thought that the use of paraffin might be employed in such cases. I, however, only tried it once, and it, in my opinion, did not come up to expectations. I found it too troublesome to work with; probably my lack of experience in its use had something to do with it.

*Dr. Munro Kerr* agreed with *Dr. W. L. Reid* that the slighter forms of prolapse could often be quite satisfactorily treated by pessaries, and he also thought the Albert Smith and "boat-shaped" varieties the best. He, however, was much opposed to the use of rubber instruments.

Many of the more severe cases, he thought, could be quite satisfactorily treated by a thorough repair of the perineum and an anterior and posterior colporrhaphy. He always cut well out to the sides and stitched up the raw surfaces in layers, for only by that means, in his experience, could a solid perineal body be produced. When, however, there was extreme prolapse, a ventrofixation was called for in addition to the perineal repair, and the method he employed was that referred to by the previous speaker. He did not approve of stitching the posterior surface of the uterus to the abdominal wall, and he thought the recorded cases showed that there was a liability to greater difficulty in a subsequent labour if the latter procedure was followed.

*Dr. G. Balfour Marshall* said he wished specially to refer to prolapse associated with great hypertrophy of the supra-vaginal or intermediate portions of the cervix. These cases were by no means uncommon, and should not be operated on till the hypertrophy was reduced. If the prolapse were reduced and prevented from recurring by a cup and stem pessary or a rubber ring aided by tamponade of the vagina, the hypertrophy of the cervix disappeared. He had seen the cervix shrink as much as three inches in several weeks by this simple procedure, which did away with any necessity for an extensive amputation. Anterior colporrhaphy, with colpoperineorrhaphy, were sufficient in many cases, so that a ventrofixation was not always justifiable. If the vaginal portion of the cervix was hypertrophied, he amputated it and then narrowed the vagina to such an extent that after

tying the sutures it only admitted the finger. Unless the vagina were well narrowed, the prolapse would recur. He usually preferred the method of operating described in Kelly's book, but the primary object was to get a deep and good supporting perineum.

There was no doubt that not a few cases recurred, one authority giving 30 per cent as the extent of the failures. A ventrofixation was indicated if the prolapse showed signs of returning after a thorough narrowing of the vagina had been done.

The *President* expressed his opinion that in many cases of prolapse an Albert Smith pessary gave satisfactory relief. The ring pessary and the cup and stem were also useful. In cases requiring operation, his usual plan was to combine a ventrofixation with an enlargement of the peritoneum. In many cases, anterior colporrhaphy was not required. In the ventrofixation, he simply united peritoneum of uterus to peritoneum of abdominal wall. He did not wish to fix the fundus firmly to the abdominal wall. What was desired was a union that permitted free mobility of the uterus, while at the same time the fundus was kept directed towards the anterior abdominal wall. In the perineal operation, he rawed a large surface and introduced all the sutures from the skin, using a strong curved needle and silkworm sutures.

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#### GLASGOW SOUTHERN MEDICAL SOCIETY.

DR. JAS. H. NICOLL gave the following surgical demonstration at the the Sick Children's Dispensary on 12th January:—

1. Hernia of the ovary in infants.
2. Birth fracture of the skull.
3. Cerebral paralysis of infancy and childhood.
4. Congenital hypertrophic stenosis of the pylorus.
5. Abnormalities of post-anal gut or neurenteric canal.
6. Club-foot and club-hand.
7. Harelip and cleft palate.
8. Stereoscopic photographs bearing on the surgical affections of childhood.
9. Calculi removed from various situations.
10. Vermiform appendices removed from abnormal sites.
11. Lantern slides illustrative of surgical affections of childhood.



## GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1904-1905.

MEETING I.—5TH OCTOBER, 1904.

*The President, DR. JAMES DUNLOP, in the Chair.*

## PRESIDENTIAL ADDRESS—THE SANATORIAL TREATMENT OF CONSUMPTION.

BY DR. JAMES DUNLOP.

Dr. Dunlop, in the course of his address, referred to Nordrach-on-Dee, where he had been able to study the subject fully. He described the climatic and hygienic principles that had been adopted in the construction of that typical sanatorium. He detailed the routine *régime* carried out on the patient's arrival, and pointed out briefly how he is instructed in the use of the thermometer and the spittoon, and in the necessity of avoiding infection from the sputum. For about a week after his arrival the patient is kept in bed, and takes his own temperature (in the rectum) at least four times a day. When this permits of it, he is allowed up, the temperature being carefully watched to see the effect of exercise. The greatest attention is paid to diet, and, whilst an endeavour is made to get into the patient a large quantity of nutriment, overfeeding and stuffing, which so often lead to loathing of food, are avoided. As a rule, for the first few days a fair "average" diet is given. The patient is weighed, and, if he does well, the diet is not changed. If, however, he loses weight, he is put on a test diet for four days. All that he takes is weighed or measured, and all excreta and urine passed during this time are measured and analysed. His metabolism is thus arrived at, and a diet is fixed to meet the waste going on, with a margin over for building-up purposes. Great importance is attached to the state of the stomach and the powers of assimilation. The prognosis is very grave, even though the lung lesion is apparently slight, in those cases where there is a dilated stomach or a poor digestion.

Active exercise in a healthy individual will raise the temperature two or three degrees (a point not generally known), but it quickly recedes again during rest to the

normal. Thus, whilst the consumptive after exercise may have a temperature of, say, 101° F., it may take fully an hour for it to return to normal, whilst a healthy individual's temperature raised by the same exercise will have reached normal after about fifteen minutes; this tardy return to normal after exercise is a point on which great stress is laid.

Among the many points which impressed Dr. Dunlop was the "air hunger" which developed in the patients who were trained to this open-air treatment; they immediately felt uncomfortable in a room with closed windows, and even in a railway train convalescent patients would sit with the windows wide open, enjoying the draught apparently with impunity. "Catching cold" from exposure to fresh-air treatment was not a common occurrence.

In this Scottish sanatorium the beneficial effects of rest in bed, with proper dieting and fresh air, were very striking in the reduction of fever, the increase of appetite, and the general tonic effect on the whole system. The absence of medicines was another feature of novelty in the treatment of phthisis. Open-air treatment was not a specific for all cases of consumption, but it was the best that was at present known.

Dr. Dunlop said the most famous German sanatoria were those of Falkenstein in the Taunus Mountains and Nordrach in the Black Forest; but he was of opinion that, before recommending patients to sanatoria on the continent, it would be well to consider the claims of our own land, remembering that a cure effected in the patient's own country, where he expects to make his living, is likely to be more permanent than one obtained abroad, and that the climate of some parts of Scotland, though not ideal, is as well fitted for the open-air treatment as that of continental resorts.

*Dr. C. R. McLean* moved a hearty vote of thanks to Dr. Dunlop for his address.

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#### MEETING II.—19TH OCTOBER, 1904.

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*The President, DR. JAMES DUNLOP, in the Chair.*

At this meeting the members took part in a "hat night." The subjects of discussion were medical and surgical topics.

**MEETING III.—2ND NOVEMBER, 1904.**

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*The President, DR. JAMES DUNLOP, in the Chair.*

The Society met at Gartloch Asylum, when Dr. W. A. Parker, Medical Superintendent, read a paper on "The Increase of Lunacy," which appears as an original article at page 161.

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**MEETING IV.—16TH NOVEMBER, 1904.**

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*The President, DR. JAMES DUNLOP, in the Chair.*

**PRESENT VIEWS ON THE QUESTION OF IMMUNITY.**

BY PROFESSOR ROBERT MUIR.

Professor Muir, in the course of his opening remarks, said that the subject was a very large one, and it was difficult to present a concise statement in which due emphasis could be given to all the more important facts.

As a preliminary to the discussion of immunity, he pointed out that in every infective disease we had to deal with the results of a double activity on the part of the causal agents, viz.:—

1. The multiplication of bacteria within the body.
2. The production of toxins by the bacteria.

Therapeutics might accordingly be directed against either of these activities.

The fundamental fact in immunity had been known for a long time from clinical observation, viz., that recovery from disease might produce immunity lasting for varying periods. It was accordingly a comparatively simple step from this to the method first carried out by vaccination against small-pox. This method essentially consists in producing a mild attack of the infection. As a general rule, the more severe the attack induced, the more lasting is the immunity resulting; thus, inoculation with small-pox itself produces a more lasting immunity than simple vaccination.

After bacteria had been proved to be the causal agents in producing infective conditions, a corresponding method for the production of immunity was carried out by Pasteur in the case of anthrax and chicken cholera. In the former case, the virulence of the anthrax bacillus was attenuated by growing it at an abnormal temperature, and the degree of attenuation could be regulated by the period of growth at this temperature. Immunity of this kind is called active immunity, because it results from a reaction on the part of the cells of the person or animal treated. The principles of active immunity can only be utilised for the purposes of preventive inoculation, not for therapeutic purposes after the disease has become established.

The case of hydrophobia is an apparent, though not a real, exception, because in the case of this disease advantage is taken of the long period of incubation, and inoculations with attenuated virus are carried out during this period. The result is that, by the time the disease would have naturally developed, active immunity has already been established.

The diseases, in addition to the examples already mentioned, in which preventive inoculation has been carried out on a large scale are cholera, plague, and typhoid fever. In these cases the substance injected is an emulsion of the specific bacteria in question, one or two successive inoculations being made.

A very high degree of active immunity can also be established against bacterial or other toxins, so that ultimately the injection of very many times the originally fatal dose comes to be innocuous.

It was in the case of immunity against toxins that the wonderful property of the serum of an animal thus treated was discovered, first of all in the case of tetanus. It was found that the serum acquired an antitoxic property, *i.e.*, neutralised the toxin when injected along with the latter into another animal. The term antitoxin is usually applied to the serum of an animal very highly immunised against the toxin. A corresponding property of the serum was shortly afterwards discovered in the case of bacterial infections—a property which is usually known as antibacterial. In this case the serum, when injected with the corresponding bacterium, protects the animal thus treated against an attack of the disease caused by the organism in question. Immunity of this second order, whether antitoxic or antibacterial, is known as passive immunity, because the immunity conferred does not imply a vital activity on the part of the animal or

person treated. It is manifest that in this case the serum can be used after the disease has declared itself, *i.e.*, as a direct therapeutic remedy.

It was also pointed out that passive immunity was of shorter duration than active immunity.

The results of researches have shown that it is not the disease *per se* which produces the immunity, but certain chemical substances elaborated in the system during the disease; in fact, antitoxin, for example, may be produced in large quantity without the appearance of any disease symptoms whatever.

Underlying the various phenomena of immunity we have a fundamental fact, *viz.*, the production of what may be termed *anti-substances*. When a toxin is injected, antitoxin is produced, and it has been now proved that these two substances enter into a chemical combination with each other. So, also, when a bacterium is injected, the antimicrobial substance which is produced combines chemically with the bacterium, although in this case the bactericidal effect requires the action of another substance normally present in the serum, which is called *complement* or *alexin*.

All these anti-substances are, within certain limits, specific; that is to say, diphtheria antitoxin acts only on diphtheria toxin, typhoid anti-substance on the typhoid bacillus, &c.

Similar anti-substances, however, are developed towards various non-toxic organic molecules when these are injected into the tissues. For example, the serum of an animal when injected into another of different species gives rise to an anti-substance which combines with the former, and produces a cloudiness. Such an anti-substance is termed a "precipitin." The most important facts with regard to immunity, therefore, fall under the heading of the production of anti-substances. The number of these which may be produced appears almost infinite, and the facts discovered throw a wonderful light on the complicated organic structure of the tissues. The mode of production of these substances cannot yet be said to be completely elucidated, but certain important facts have been determined. One of these is that the anti-substances are not new creations, as it were, but represent molecules normally present, and produced in excess under the stimulus of the substances injected. This stimulus would appear in some way to depend on the combination of the substance with the anti-substance, and probably the phenomenon is best explained by saying that the anti-substance is used up by the combination, and

that new molecules are formed in great excess. These new molecules come to be free in the serum, and confer on the latter its specific character.

Further points were also discussed, and it was pointed out that a new field of inquiry had thus been opened up—a field which might be designated that of biological chemistry.

It is to be noted that none of the bodies under consideration are accessible to ordinary chemical methods; they are revealed only by their biological action.

The subject of agglutination was also referred to, and Professor Muir also discussed, in conclusion, some of the chief facts of the phagocytic theory. He pointed out that the destruction of bacteria by phagocytes was of the highest importance in the defence of the body, but that it was necessary to enquire why phagocytosis was sometimes present and at other times absent, and how the appearance of the phenomenon during the process of active immunisation could be explained.

Recent researches, amongst which those of Wright were specially referred to, went to show that many of the phenomena of phagocytosis had their explanation in certain chemical bodies present in the serum. Such bodies might act on the bacteria in such a way as to make them a prey to phagocytes, and even attract the latter. Phagocytic activity in such a case would be regarded merely as an indication of the presence of such substances in the serum. No doubt, the so-called "education" of phagocytes was to be explained in this way.

*Dr. James Dunlop* asked if Professor Muir could explain the occurrence of relapses in enteric fever. Could any reason, in the light of recent facts bearing on immunity, be assigned for their occurrence? Might it be, for instance, that too little of the anti-substance was formed during the illness?

*Professor Muir* said, in reply, that although the matter could not be said to have been completely settled by experimental work, there were two possible explanations. The one was that infection might take place by different races of the typhoid organism, the activity of one of which predominated during the process, and was chiefly responsible for the attack. Immunity against this race would correspond with the subsidence of the disease, and the so-called relapse might be due to the activity of a different race. The basis for this theory was the fact that different races or "strains" of the organism were affected in different degrees by an anti-substance, *e.g.*, an agglutinin. The other possible explanation

was that in some way not understood the amount of anti-substance might fall, and thus some of the bacilli which had not been killed off would produce a recrudescence of the disease. He was not prepared to say which of these explanations could be regarded as the correct one, but he did not think the occurrence of relapses was incapable of being explained by facts experimentally established in other diseases.

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### MEETING VIII.—1ST FEBRUARY, 1905.

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*The President, DR. JAMES DUNLOP, in the Chair.*

#### AN ACCOUNT OF SOME DISEASED CONDITIONS FOUND AMONG ANIMALS SLAUGHTERED FOR FOOD IN GLASGOW.

By MR. A. M. TROTTER, M.R.C.V.S.

The following is an abstract of Mr. Trotter's remarks:—

During the year 1903, there were slaughtered in the four city abattoirs, 87,000 cattle, 2,327 calves, 283,323 sheep, 53,483 pigs, 24 goats—in all, a total of 426,157 animals. Of the above, the carcasses of 2,586 cattle, 208 swine, 397 sheep—a total of 3,191 animals—were either partially or totally destroyed as unfit for human food. In addition to the above, 41,965 organs (including heads) were also destroyed.

The diseases rendering the flesh of the seized carcasses unfit for human food include tuberculosis, cancer, sarcoma, anthrax, pneumonia, &c., as also injuries sustained in transport, decomposition, and a dropsical condition of the flesh.

The most important of all the causes of seizure is undoubtedly *tuberculosis*. No fewer than 1,961 carcasses were either partially or totally destroyed on account of this disease.

Of the home animals, 7,484 (or 15·80 per cent) of the 47,362 cattle, 7 (or 0·30 per cent) of the 2,325 calves, 1 (or 0·0003 per cent) of the 271,385 sheep, and 2,132 (or 3·98 per cent) of the 53,483 pigs slaughtered, were found, on *post-mortem* examination, to be tubercular.

These figures compare unfavourably with those for cattle landed from Canada, or the United States of America. Of

the 39,638 cattle slaughtered, only 442 (or 1·11 per cent) were found thus affected.

Of the 7,484 home cattle affected with tuberculosis, 3,128 were found affected in the pleural cavity, 388 in the peritoneal cavity, and 3,220 in both cavities, whilst 748 showed lesions in other parts of the body.

If all those cases in which tubercular lesions were found in both cavities be discarded, it will be seen that 88·96 per cent of affected cattle contracted the disease through the inhalation of tubercle bacilli.

An enquiry into the prevalence of tuberculosis was carried out during 1903 as affecting the different sexes of home cattle killed in the Milton and Victoria Street abattoirs.

Of the calves, 0·12 per cent; of the oxen, 3·95 per cent; of the bulls, 15·18 per cent; of the heifers, 8·43 per cent; of the cows, 49·24 per cent, were found to be tubercular.

It will be noted that tubercular disease is more frequently found on *post-mortem* examination to affect the older home animals, a result of housing these animals in ill-ventilated, badly-lit, and dirty byres infected with tubercle bacilli.

In addition to the usual modes of ingress by which tubercle bacilli may gain access to the system, I am of opinion that the lower animals frequently become tubercular through local infection. Among bovines, uterine tuberculosis is comparatively common. I have seen instances in which the uterus was the only organ affected. In these cases there can be little doubt that the cow became affected through coitus. The reverse, also, frequently occurs, the male becoming infected from a female during the union.

It is customary for the inspectors to incise the superficial inguinal lymphatic glands of each bull, the result being that a considerable number of animals are found affected in these glands.

[The lecturer here gave a detailed account of a recent case of tuberculosis of the penis in a well-nourished three-year-old bull; and he also narrated the case of a well-nourished young Irish pig where the scrotum had been infected with tuberculosis by inoculation of the castration wound, either at or shortly after the operation.]

During the year 1903, 134 cases of *malignant disease* were discovered on *post-mortem* examination. Under the term malignant disease are included all forms of carcinoma and sarcoma. The four most common seats are—(1) Liver, (2) rumen, (3) suprarenals, and (4) thymus. But malignant



growths are to be found in other parts of the body. It is of interest, however, to note that cancer of the mammary gland and of the uterus is seldom met with in bovines. Why this should be so it is difficult to explain, when one considers the frequency with which malignant disease occurs in these situations in women.

The most common malignant growth is adeno-carcinoma of the liver, of which 122 cases were detected. This condition is found most frequently in aged animals. The cases were distributed in the different species as follows:—Cattle, 119; sheep, 3. Of the former, 116 were animals consigned from Ireland, while the remainder (3), if they had not been bred, had at least been fed for some time, in Scotland. Of the latter, only one could be traced, and it was ascertained to have been consigned to the Glasgow market from West Perthshire.

As in man, so in the lower animals cancer is more frequently an accompaniment of the later stage of life. Many of the cattle imported from Ireland, and slaughtered in Moore Street abattoir, are aged cows, and it is amongst this class of animal that the disease is most frequently found. These animals are frequently in very poor condition.

[The lecturer exhibited a preparation showing the *cysticercus cellulose*, the larval or cystic form of a well-known tapeworm of man, the *tænia solium*.]

This case of *cysticercus cellulose* is worthy of more than passing notice, on account of the severity of the infection. The pig had been consigned from Ireland, was about 9 months old, and was in good condition. The flesh of a pig so infected is known in common parlance as "measly pork." In some instances the invasion is so slight that it is only after very careful scrutiny that cysticerci can be discovered, even in the seats of predilection. In the present case, however, the psoas muscle and the fleshy portions of the diaphragm are seen to have increased largely in bulk, and a closer examination reveals the presence of enormous numbers of cysticerci lying between the muscle fibres. To determine the number of cysticerci present, 38 grammes of the psoas muscle were subjected to artificial digestion. By this means it is possible to imitate the natural process of digestion, *i.e.*, to dissolve the proteids, &c., and to leave unaffected the heads of the tapeworm. The latter, when the process of digestion is complete, appear as round white bodies, about the size of millet-seeds, lying at the bottom of the flask. From the 38 grammes

examined, 577 heads of the *tænia solium* were recovered, so that a pound of this pork would contain some 6,887 cysticerci. For the purpose of comparison, it may be mentioned that Küchenmeister, on one occasion, found 133 heads in a piece of pork weighing 17 grammes, which is equivalent to 3,548 to the pound.

An investigation was undertaken to determine to what extent home swine are the hosts of the *trichina spiralis*. In all, 3,000 pigs were examined, with a negative result. In order to corroborate this result, 503 rats were examined, and 8 (or 1.59 per cent) were found to be infected; but as these animals were caught in places where they had access to American pork produce, the probability is that they were infected through this medium.

In striking contrast to the result of that enquiry relating to home swine, it may be mentioned that of 47 shoulder cuts of American pork examined, 1 (or 2.12 per cent) were found to be infected. In the report of the Bureau of Animal Industry of the United States of America for the year 1899, it is stated that of 2,227,740 carcasses examined, no less than 67,510 carcasses (or 3.03 per cent) were found, on microscopic examination, to be infected.

Many European governments have prohibited the importation of American pork into their respective countries, unless it is accompanied by a certificate from the American Government to the effect that it has been microscopically examined, and found free from this parasite. Our own Government has taken no steps to prevent the "dumping" of this infected pork upon our shores, and it evidently goes on the assumption that "free trade" in diseased meat, when it comes from an alien country, ought to be tolerated.

#### GLASGOW NORTHERN MEDICAL SOCIETY.

THE third meeting of the Society was held on 6th December, 1904, Dr. J. Galbraith Connal, President, in the chair.

MR. EDINGTON showed a specimen of epithelioma of the rectum removed from a maiden lady, aged about 60. For two years previously the patient had had occasional attacks of diarrhœa, with passage of blood. For the last four months of this time the bleeding and purging had been much worse,

and shortly before seeking advice she had a sense of weakness below the small of the back. During defæcation pain was felt in the lower part of the bowel.

The tumour was situated in the anterior wall, about 1 inch up from the internal sphincter, and, while not adherent to, distinctly bulged the posterior vaginal wall below the fornix.

Preliminary colotomy was performed on 7th November, 1903, and on the 18th the rectum was excised by Tuttle's method. The posterior vaginal wall was wounded in the removal, and about four weeks later the anterior lip of the bowel had become retracted and fixed to the opening in the vagina, so that some fæces came from that passage.

On the 16th December the bowel was freed, and brought down outside the anus; at the same time the colotomy wound was closed. Subsequently a fistula formed at the seat of the colotomy wound, and this was present when she left the home. Six months later there was a recto-vaginal fistula, probably from recurrence of the disease. The colotomy fistula also persisted. There was very incomplete control of the bowel.

DR. JARDINE read a paper entitled "Anterior and Posterior Parietal Presentations of the Head in Slightly Flattened Pelves," recommending the use of forceps in anterior, and version in posterior presentations.

The Society held a meeting on 10th January, Dr. Connal in the chair.

Dr. MIDDLETON gave an address on "Pleural Effusions, with special reference to Children," and began by referring to the frequency with which effusion was met, and the difficulty sometimes felt in making a diagnosis. This difficulty was to some extent due to teachers laying too much stress on absence of respiratory murmur in the differential diagnosis between effusion and consolidation. As a matter of fact, bronchial breathing was very often present in pleural effusion, not limited to a track along the vertebral column, but audible over the area of dulness. This character of breathing occurs in small and moderate effusions, but is usually absent in large effusions where there is displacement of organs.

Tympanitic resonance in the upper part of the chest is common in large effusions. This disappears as the fluid extends upwards, but comes back as the fluid becomes absorbed.

Deficiency of movement is also common in large effusions.

Displacement of organs is an important sign in effusions. The position of the heart should be noted, also that portion of stomach known as Traube's area.

Absence of vocal resonance is not a reliable sign. Pectoriloquy is often heard along the margin of the scapula in effusion.

As to the nature of the fluid, Dr. Middleton holds that the only positive means of diagnosis is the needle. The temperature is not much use as a guide. With pus and serum it may oscillate irregularly. If the temperature is high, it points to pus. Rigors are rare in empyema. In empyema more than in serous effusions large bubbling râles accompany the tubular or bronchial breathing. Dr. Middleton does not attach much importance to Baccelli's sign. Strong presumptive evidence of pus is seen in bulging of intercostal spaces, redness, œdema, and tenderness over the dull area.

The history of the case may help in distinguishing the nature of the fluid. If beginning like pneumonia and going on to effusion, then suspect pus. It is rare for pneumonia to develop empyema, and it is thought that these cases are empyemata from the start.

If with the needle you get pus, the question may arise, does it come from pleura or from lung? In empyema the pus is abundant. In abscess of lung it is scanty, and, with the microscope, catarrhal pigmented cells, along with fragments of lung tissue, may be got.

The prognosis is good if the diagnosis is made early. Out of 38 cases of simple effusion at the Sick Children's Hospital, 1 died. Of 24 empyemata, 5 died in the medical ward and 19 were transferred to the surgical side. Two of the 5 had definite pneumonia, 2 had meningitis, and 1 pericarditis.

Dr. Middleton advocates removal of fluid if the patient is distressed, and repeating if necessary.

In empyema in very young babies a simple aspiration often cures.

In all cases of pneumonia, or what is diagnosed as pneumonia, in a child, where there is continued delirium, or oscillating temperature, or tenderness over dull area, or bulging inter-spaces, or deferred crisis, it is right to suspect empyema and explore.

## REVIEWS.

*A Text-Book of Surgery.* By WILLIAM W. KEEN, M.D., LL.D., F.R.C.S. (Hon.), and J. WILLIAM WHITE, M.D., Ph.D. Fourth Edition, Thoroughly Revised and Enlarged. London: W. B. Saunders & Co. 1903.

It seems almost superfluous to notice this work at any length. The earlier editions are so well known, and have been so well received on this side of the Atlantic, that the completeness, up-to-dateness, and general excellence of the edition now before us cannot be said to cause any surprise. As proof of the vogue the earlier editions have had, it is necessary here only to mention that almost 40,000 copies have been disposed of. The fourth edition is so great an advance on the foregoing that in many ways it may be said almost to represent an entirely new work. Many old illustrations, as well as a considerable quantity of the old text, have been omitted, while a great number of new illustrations, including radiographs and cuts of electrical illumination instruments, have been introduced. It is impossible to mention all the additions to the text, or to comment on these even in a general way. Generally, however, it may be said that the new matter is written by masters in the particular branches dealt with, and that they deal with their subjects in the broadest way. The writers have in almost every case succeeded in stamping their individuality on their work, and while stating frankly enough, where necessary, any divergent points of view, they have adhered to the object of an educational work such as this by indicating, from their own standpoint, the probable trend of modern surgical principles and practice.

It may be mentioned that there are in this edition six entirely new chapters. Three of these, viz., on military surgery, naval surgery, and tropical surgery, may be perhaps regarded as superfluous in a work of this kind, for after all they seem to call for almost independent treatment, and, as a matter of fact, they have only been included (without so increasing the work as to make it abnormally bulky) by the adoption for them of a much smaller type than is used in the other chapters.

The chapters on military and naval surgery are written

entirely from the point of view of American army and navy organisation and experience, and their value for this reason, if for no other, is very limited. The chapter on tropical surgery is good in its way, but its two illustrations (of elephantiasis of scrotum and of madura foot) are not even passably good, and would have been well omitted. The new chapter (of seven pages) on "The examination of the blood in its relations to surgical diagnosis and treatment" is remarkably successful, and, amongst other things, gives a very good idea of the present value of "the leucocyte-count in abdominal lesions." Indeed, the summary is worth quoting here:—

(a) "The most serious indication is a rising leucocyte-count." This persistent rise may be taken as almost conclusive indication of purulent accumulation, even though temperature and local signs seem clearly abating.

(b) "A count of over 18,000, if maintained for more than a few hours, is a strong indication for operation."

(c) "It is never safe to be guided solely by any one indication, such as blood-count, temperature, local tenderness, &c. But it is as unwise to make up one's mind without a leucocyte-count as it would be to be guided wholly by the leucocyte-count without reference to the other factors in the case."

Clinical and "laboratory" methods should not be divorced.

(d) "Leucocyte counts made immediately after a patient's arrival at a hospital are very apt to be uncharacteristic." Fatigue, alarm, &c., may depress or elevate the leucocyte-count, just as they may affect the temperature.

This chapter is written by Dr. Richard C. Cabot.

A chapter on immunity, particularly from the point of view of surgical affections, is contributed by Dr. Arthur K. Stone. This seems very well written, and includes a brief survey of even the most recent work of Metchnikoff, Ehrlich and Bordet. One confesses to a doubt regarding the utility of the inclusion of this subject in a text-book on pure surgery. Besides, the transition stage cannot yet be said to be anything like over. Every year sees the practical lapse, into the unknown and forgotten, of terms but lately familiar almost as household words, and the most recent views on uniceptors, amboceptors, antibodies, autolysin, isolysin, and the like, are certain, it seems to us, to be as shortlived as the rest. May we say that, from the point of view merely of the terms introduced, it is certainly to be hoped that their duration of life will not be unnecessarily prolonged?

The modern surgery of the pancreas claims what is practically a new chapter.

The chapter on "Surgery of the Osseous System," though greatly altered from the earlier works, and distinctly for the better, cannot in our view be yet regarded as satisfactory. Particularly is this so as regards inflammatory bone disease. There yet remains to be written a coherent scheme of inflammations of bone, which will really blend the still irregularly related and incoherent clinical and pathological entities which no surgical text-book that we know of has so far made a serious—or, at least, a successful—attempt to correlate.

Is it not possible to regard bone, like any other tissue, as one organic whole, treat broadly of the course, effects, and diagnosis of inflammations of its substance, and from that work out the bearing of any anatomical features peculiar to its firm inorganic framework? We think it is on these lines alone that much can be hoped for in clearing up the present somewhat muddled state of scientific opinion on the subject.

More especially from the point of view of the student, along such lines as these alone have we found it possible, with any degree of success, to impart anything like a good working knowledge of this important branch of surgery.

Though we have drawn attention to what appears to us perhaps not altogether satisfactory as regards a few details of this work, let it not be supposed that our welcome is only half-hearted. On the contrary, we cheerfully offer to the authors our heartiest praise. The work is an admirable one. Let us say, in conclusion, that the index at the end of each volume—instead of, as in the earliest editions, at the end only of the second volume—is an improvement, and a great saving of time and labour to the reader.

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*A Treatise on Diseases of the Rectum, Anus, and Sigmoid Flexure.* By JOSEPH M. MATHEWS, M.D., LL.D. With Six Chromo-lithographs and Numerous Illustrations. Third Edition, Revised. New York and London: D. Appleton & Co. 1903.

THE chief advantage of this book on rectal surgery is its eminent practicalness. All through it bears the stamp of the personal observation and personal experience of the author. While it is worked out on these broad lines, and is characterised specially by its satisfactory clinical nature, the anatomical

and pathological features of rectal disease are also kept well in view. The plan of the work is not materially altered from that of the earlier editions, but there have been considerable alterations in the text. The chapter on cancer has been entirely re-written, and it may be said that it forms now one of the most interesting portions of the book. A number of new operations are given and well illustrated, while a fairly full discussion of the valves of the rectum is of some interest.

We will content ourselves with referring to only two points of detail dealt with by the author, viz., as regards the carbolic acid treatment of hæmorrhoids, and as regards the continuity of external with internal hæmorrhoids, he says—"Since the carbolic acid plan of treatment was begun, many itinerants and quite a number of regular physicians have fallen into the error of injecting external piles. I cannot believe that the wildest enthusiast in this plan of treatment ever intended that the plan should be used in *external piles*, for it will be seen at once that although the sloughing process might take place and the pile be eradicated, the inflammation excited would be great, the pain intense, and ulceration might possibly follow. Therefore, to those inclined to use this method of treatment in the internal variety, I would certainly say, do not extend it to external hæmorrhoids." Again—"If external piles are complicated with internal, it is my observation that they are usually a part of them and continuous with them; therefore, in a word, I would say that external piles, as such, should be cut off at the same time that internal piles are ligated."

These examples well typify the practical nature of the work. Altogether, it must be said that the author has laid the profession under a considerable debt by the publication of so admirable and practical a treatise on rectal disease and its surgical treatment.

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*The Nervous Affections of the Heart, being the Morison Lectures delivered before the Royal College of Physicians of Edinburgh in 1902 and 1903.* By GEORGE ALEXANDER GIBSON, M.D., D.Sc., F.R.C.P. Ed., F.R.S.E. Edinburgh: Young J. Pentland. 1904.

THESE six lectures are reprinted from the *Edinburgh Medical Journal* for 1902 and 1903. They are arranged in two groups, the first three dealing with sensory, and the last three with motor disturbances. In the first lecture, there is an historical sketch of the progress of our knowledge of



sensory disorders of the heart, and this is followed by a consideration of the subjective and then of the objective features of such disorders. Dr. Gibson strongly objects to the use of the expression "pseudo-angina," and refuses to recognise the division of angina pectoris into true and false. He divides it into organic and inorganic, the latter in its turn being either toxic or neurotic. The second lecture discusses the fascinating subject of the nervous connections of the heart. The third deals with the treatment of the sensory cardiac neuroses. Lecture IV is on the rate of the heart, and touches on such conditions as bradycardia and tachycardia. Lecture V is on rhythm, and lecture VI on force, the latter including the subject of asystole.

These lectures well deserve to have been reprinted, and may be commended to our readers as both learned and interesting.

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*Vaginal Tumours, with special reference to Cancer and Sarcoma.* By W. ROGER WILLIAMS, F.R.C.S. London: John Bale, Sons & Danielsson, Limited. 1904.

IN this little book, which is hardly more than a pamphlet, Mr. Roger Williams gives an excellent sketch of vaginal tumours, that will be read with interest by general practitioner and specialist alike. It is like other books Mr. Williams has written, an attempt to collect and systematise the ascertained facts regarding his subject—to bring them, in fact, into scientific relationship. And the attempt, even if not altogether successful, is worthy of all praise.

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*Practical Gynecology: A Comprehensive Text-Book for Students and Physicians.* By E. E. MONTGOMERY, M.D., LL.D. Second Revised Edition, with 539 Illustrations. London: Rebman, Limited. 1904.

THE Americans are endeavouring to capture the British market by well printed and beautifully illustrated books, the outward appearance of which is certainly calculated to impress an uncritical public. It would be well, however, if the medical profession in this country would remember that, while American medicine is a young and vigorous sapling, it is hardly yet mature enough to give us a thoroughly developed

fruit. That will undoubtedly come, and quickly too, seeing that in America both the opportunity and the will to advance are present in perhaps higher degree than amongst ourselves. The hunger after novelty, the restless rush after what is different from and may possibly be no better than what we have already, the hope that we may do better unalloyed by any fear that we may do worse, the boldness of inexperience—all these characteristics of youth are very characteristic of America.

These remarks, though suggested by this American *Text-Book of Gynecology*, are not intended to suggest that Dr. Montgomery—whose name suggests a Scottish descent—shows the faults of American authors in any aggravated degree. We have, of course, the usual Americanisms, which tend to shorten words, while sentences remain as long and tautological as ever. For example, we have such contractions as dysmenorrhea, leucorrhea, diarrhea, just as we have gynecology. Of the same kind are iodid, chlorid, bromid, &c., pathologic, diphtheric, chemic, physiologic, &c. Then we have words spelled according to their sound, *e.g.*, center, goiter, nozle, cholagog, and hemal. *Draft* in American does not mean a bank draft, but a draught. When Landau bisects the uterus the Americans call it bifurcation. Then we have *disposition* for disposal, *briny* for branny, *aside from* for besides, the *digital finger* for the finger itself, *elapsed* for passed, *consequently* for subsequently, and so on.

This mangling of English may be accounted for on the theory that, like the German Emperor, the American is a young man in a hurry. And the same theory may account for his ignorance of Latin, and especially of Latin grammar, though we suppose Latin is required of the American medical graduate. Yet the American seems rather proud of his Latin, and quite oblivious to his ridiculous errors. A few of these curiosities may be culled from this volume. *Per oram*, *e.g.*, would puzzle us unless we noted that it was a method of giving an ounce of brandy. Then we have *linea striata* as a plural neuter, *cornua* for *cornu* as a singular, *cannula*, *fimbria*, *carcinoma*, as plurals, and then, as if to make amends, *carcinomata* as a singular. A hard *edema* may appear in the *preputii clitoridis*, a structure which anatomists will guess at under its disguise, but they will guess in vain at the *detrusor vesicae uterini*, which is paralysed by the destruction of the two lower sacral nerves. It is evident that whatever he may know, his knowledge of Latin is marked by what the American calls "brevity."

It becomes a question whether a mind which betrays such defects of training in one sphere is likely to be well trained in another; but perhaps such verbal defects as we have quoted should not prejudice us too much against the American intellect. It is a more serious matter, however, when we find careless methods of expression, evidently indicating careless methods of thought, and of these the book before us, which is in its way a very good book, gives us many illustrations.

If it were only possible to re-edit it by correcting its English, by condensing its meaning, by reducing its inflated sentences to proper dimensions, and by thus halving its size, we could recommend it to English readers as a fair exposition of the present state of gynæcology, but as it stands it can only be regarded as a fair representation of what Americans call "gynecology."

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*Die psychischen Zwungerscheinungen (The Psychological Impulsive Phenomena).* By Dr. L. LOEWENFELD. Wiesbaden: J. F. Bergmann. 1904.

SEVERAL considerations have been operative in inducing Loewenfeld to undertake this work. Since ever his handbook on hypnotism appeared, he has desired to follow it up with a supplement—a description of the impulsive or irrepressible phenomena, since these represent on the psychopathological side what the phenomena of suggestion represent on the psycho-physiological. Moreover, he has been anxious to gather together all he has contributed to this department of medicine. A collection of these papers, though numerous, would only, however, have been equivalent to offering disjointed fragments, since Loewenfeld believed that literary necessity demanded a systematic treatise. This demand, too, seemed to him all the more clamant, since he finds that specialists in mental disease show in their writings a woeful ignorance of, or indifference to, what their colleagues have already done. Such ignorance and indifference are interfering with progress, hence the need for a systematic treatise which shall give consideration to everything that has been published which can be regarded as belonging to the province of the impulsive phenomena.

This work is a bulky volume of 568 pages. First of all, there is a very exhaustive historical review, followed by chapters dealing with the definition and the classification of the impulsive phenomena. Next we have considered the

impulsive phenomena of the intellectual, emotional, and motor realms. Then come chapters dealing with etiology, nosology, course and prognosis, the forensic attitude to the idea of impulsions, and, finally, there is a chapter in which prophylaxis and treatment are discussed.

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*Biographic Clinics.* Volume II : The Origin of the Ill-health of George Eliot, George Henry Lewes, Wagner, Parkman, Jane Welch Carlyle, Spencer, Whittier, Margaret Fuller Ossoli, and Nietzsche. By GEORGE W. GOULD, M.D. London : Rebman, Limited. 1904.

WE called attention to the first volume of this work in October, 1903. Dr. Gould writes in rather bitter language of the reception which that volume had from the leading medical journals. The critics regarded him as a man with a pet theory, which possessed him to such an extent as to impair his judicial faculty. Dr. Gould now continues his research into the striking influence exerted by eye-strain, resulting from uncorrected refractive errors, in diminishing the working capacity of persons of genius. A considerable portion of the present work has already appeared in the journals, but the subject is so important that it can scarcely be brought too often before the attention of the medical profession. The book contains much that is interesting and painful, not the least so being the criticism of Möbius's views on the illness and character of the unfortunate Nietzsche. Our readers should glance through this volume for themselves.

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*Saline Therapy : Being Part V of Several Clinical Treatises on the Pathology and Therapy of Diseases of Metabolism and Nutrition.* By PROF. DR. CARL VON NOORDEN and DR. CARL DAPPER. Authorised translation under the direction of BOARDMAN REED, M.D. Bristol: John Wright & Co. 1904.

THE main part of this volume is divided into five chapters, of which the first deals with the influence of saline mineral waters on gastric secretions. Improvement has been noted in cases of gastric catarrh which followed excesses in alcohol and tobacco, and occasionally in phthisis and in icterus. Many cases of hyperacidity likewise derive benefit from these waters.

On the other hand, such waters are contraindicated for young girls with anæmia and chlorosis.

The second chapter treats of the influence of saline waters on the absorption of food and on the digestion of fats. The authors find that fat and saline waters are by no means incompatible. The third chapter discusses the influence of these waters on proteid metabolism, the conclusion being that such influence is *nil*. The fourth chapter treats of their influence in uric acid excretion; it would appear that in gout these waters cause an increase in that excretion. In the fifth chapter there are some remarks on the use of fruit, salad, vinegar, &c., in the course of water cures, and the authors find that those substances are often forbidden when they may be not merely harmless, but actually beneficial.

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*Clinical Lectures on Mental Diseases.* By T. S. CLOUSTON, M.D.Edin., F.R.C.P.E. Sixth Edition. London: J. & A. Churchill. 1904.

In general arrangement, the new edition of this well known work follows its predecessors pretty closely. Those who are already familiar with these lectures will not be surprised at the rapidity with which new editions are called for; while those who do not know them may be assured that much pleasure awaits them in the perusal of this volume. The work is an old favourite, which we can heartily recommend.

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*Cleft Palate and Hare-Lip: The Earlier Operation on the Palate.* By EDMUND OWEN, M.B., F.R.C.S. Medical Monograph Series, No. 10. London: Baillière, Tindall & Cox. 1904.

In this number of the above well-known series, the author gives us "the personal experience of a general surgeon in delicate and important little piece of operative work."

The account of the embryology of the parts involved is not very clear; but, in the remaining portion of the book, Mr. Owen has succeeded in placing before his readers a good description of the treatment of the malformation. His dictum—printed in italics (p. 41)—that the time for the operation is between the ages of 2 weeks and 3 months, will

doubtless raise opposition from the older surgeons; but his arguments are backed up by his experiences, and his teaching will undoubtedly be followed by many of the younger operators. He draws special attention to Brophy's operation as a valuable means of avoiding tension. His description of the operation, which he himself practises in hare-lip, is very clear, and the operation is, we think, sound.

We feel that the prefatory "apology" to the volume is unneeded, and we would recommend this little monograph to the careful consideration of all operating surgeons.

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*Uric Acid: an Epitome of the Subject.* By ALEXANDER HAIG, M.A., M.D.Oxon., F.R.C.P. London: J. & A. Churchill. 1904.

WE welcome this book as an epitome of the subject, but the author has not the gift of presenting his case in the best light. The work would be improved by careful editing, boiling down, and punctuation, and even more perhaps by being rewritten under the strict supervision of one who could arrange its contents in a systematic fashion and eliminate needless repetition. The first part of the book, however, is decidedly interesting, and worthy of being attended to. We are not of those who regard Dr. Haig's views as purely fanciful. The evidence is very strong, and perhaps conclusive, that for a certain small proportion of our fellow-creatures uric acid is a poison, as Dr. Haig maintains it is for the whole of humanity; but we cannot accept all that the author teaches. Those who are not yet acquainted with Dr. Haig's views, and in particular those who are subjects of sick headache, would do well to glance through this little volume.

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*Epilepsy and its Treatment.* By WILLIAM P. SPRATLING, M.D. Fully Illustrated. London: W. B. Saunders & Co. 1904.

IN producing this monograph on epilepsy, the author has been able to avail himself not only of the writings of his predecessors, but also of an extensive personal experience at the Craig Colony for Epileptics at Sonyea, N.Y., and elsewhere. The fact that no complete treatise on the subject has appeared in the United States since Echeverria's was published three

years ago is adduced as one reason for the preparation of this new volume.

After an introduction on the various names that have been applied to the disease, the author devotes his first chapter, which is naturally a brief one, to the definitions of epilepsy. The second chapter is on classification, and the author gives us one in which the primary groups depend on the age at which the disease sets in, viz., (1) from birth to the third year; (2) from the fourth to the twentieth year; and (3) from the twentieth year onwards. Then follow chapters on frequency, age, sex, race, occupation, etiology, seizure types, forms of epileptic aura, sequels of epileptic convulsions, diagnosis, prognosis, treatment (general, medical, and surgical), and psychologic and medico-legal aspects. There are also chapters by Dr. Pierce Clark on the status epilepticus, and by Drs. Thomas Prout and Pierce Clark on the pathology of epilepsy. The most important change found in the cortex is destruction of the intranuclear network in the cells of the second layer and in other cells of that type, so that the nucleolus becomes a loose body within the nucleus. As these cells are sensory in type, epilepsy is regarded as a disease of the sensory elements of the cortex. In view of what has recently been written by an American author as to the influence of refractive errors and eyestrain in producing neuroses, it is noteworthy that the results of treatment for the relief of such conditions have been, in Dr. Spratling's experience, by no means very encouraging.

We note an occasional looseness of style which is not satisfactory to the reader, but the contents of the work claim for it the attention of all physicians who interest themselves in this very common and formidable disease.

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*A Treatise on Applied Anatomy.* By ED. H. TAYLOR, M.D.,  
F.R.C.S.I. London: C. Griffin & Co. 1904.

THE author was formerly a lecturer in Trinity College, Dublin, on applied anatomy, and writes with some experience. While treating the subject in a general way, the work is mainly of a surgical nature, and the suggested sub-title of "Surgery from the Anatomical Standpoint" would be quite justifiable.

The author's attempt to bring the lessons of the dissecting room into closer touch with the practice of surgery is commendable, and the result of his labours is a volume which

should be read with interest by the surgical student. The anatomy of a part or region is first given in small type; then follows a description of the various ailments and operative procedures. In the latter, the application of the anatomy previously given is pointed out.

The usefulness of the many illustrations with which the book is supplied is quite in keeping with the excellence of their finish.

Its size may at first deter the student, but there is no doubt that to the man who reads and studies the volume, anatomy will appear in a new light. This fact will be to his advantage, first as a student and afterwards as a surgeon.

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*An Atlas of Human Anatomy for Students and Physicians.*

By CARL TOLDT, M.D. Translated by M. EDEN PAUL, M.D.  
Section V, Angiology; Section VI, Neurology and the  
Organs of the Senses. London and New York: Rebman,  
Limited. 1904.

SECTION V contains Figs. 933 to 1123, and, like the preceding volume, closes with an appendix of notes by the translator. The first ten figures illustrate the histology of the blood-vessels and lymphatics. The heart is delineated in thirty figures, and the remainder deal with the vessels. The venous system is pictured in great detail—much more fully than one is accustomed to in the ordinary text-books. The distribution and situation of the lymphatic vessels and glands fills the concluding pages.

This is one of the most valuable sections of the *Atlas* yet published, and it will deservedly merit the approval of those who consult its pages.

In Section VI, after a few figures devoted to histology, we are presented with the central nervous system. This comprises sections of the cord at different levels, and diagrammatic representations of the paths of conduction. We would note that the direct pyramidal tract is here shown as arborising round the motor cells on its own side of the cord.

Passing to the brain, Figs. 1161 and 1162 are mines of information on nomenclature, but we question if the average student will delve in them for what he wants.

Macroscopic views of various parts of the brain are given in plenty—there are about sixty figures—and this is undoubtedly a very valuable part of the volume. The peripheral



nervous system, in the two divisions of spinal and cranial nerves, is represented next, and is followed by some very good figures showing the sympathetic system. The organs of the senses are given with a detail which leaves little to be desired. A very full appendix of notes by the translator precedes the index.

We confess to a feeling of disappointment with this, the concluding section of the *Atlas*. There is an abundance of good matter, but after having become accustomed to see the nerves depicted in colour, as is the case in the text-books of Cleland and Mackay, and of Gray, we are afraid that the illustrations will be considered behind the times by those for whom the work is intended. The figures are good and the detail is excellent, but the want of colour is a serious drawback to the rapid grasping of the picture. Then, again, there is, speaking of the work as a whole, a want of sharp contrast between the figures and the background: a whiter paper and a blacker ink might have improved this.

Notwithstanding, the *Atlas* forms a valuable work of reference, and we wish it all success in its venture among English-speaking students and physicians.

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*Clinical Diagnostic Bacteriology, including Serum Diagnosis and Cyto-diagnosis.* By ALFRED C. COLES, M.D., D.Sc., F.R.S.E. With Coloured Plates. London: J. & A. Churchill. 1904.

THIS is a book which deserves a hearty welcome from the profession. We are already pretty well supplied with excellent text-books which treat of bacteriology from the point of view of the laboratory worker, or of the student who expects to undergo an examination on this subject. But the present treatise aims at meeting the needs of the general practitioner who has ceased to be familiar with the experience of the laboratory, if, indeed, he ever possessed it. It tries to show how the material to be examined is to be got, and how it is to be prepared for investigation; how the suspected organism is to be distinguished from others; and how the results of the investigations are to be made useful in diagnosis, prognosis, and treatment.

The book begins with the subject of spreading, fixing, and staining films, and after describing Gram's method and its modifications, proceeds to discuss the acid-fast bacteria. This

is a question to which the author has devoted much attention, and it derives much importance from the occurrence of such bacilli, which are often non-tubercular, in milk and butter, as well as in human secretions and excretions. The tubercular and non-tubercular acid-fast bacilli can, of course, be distinguished by inoculation experiments, but these may be said to require a period of from four to six weeks for conclusive results, whereas the Food and Drugs Act requires the medical officer of health to take within one month any legal proceedings which he may wish to institute. Dr. Coles finds that tubercular bacilli can resist 25 per cent sulphuric acid in some cases, at least, for seventy-two hours, whereas all pseudo-tubercular bacilli are decolorised in sixteen hours or less. Similarly, tubercular bacilli in sputum and in cultures resist the decolorising action of Pappenheim's solution for fifty-two hours at least, whilst all pseudo-tubercular bacilli are decolorised at the end of four hours. These results suggest that a staining test may be one of the most reliable, as well as most speedy, means of differentiating between the genuine and pseudo-tubercular organisms, but further experience will be required to make this certain.

In the later portion of the book, instructions are given for the examination of the sputum, urine, and fæces for tubercular bacilli; and thereafter the various common pathogenic organisms are taken up in succession. The parasitic fungi of the hair and skin, serum diagnosis, cyto-diagnosis, and an index conclude the work. The two coloured plates furnish us with sixteen coloured figures of pathogenic organisms.

We gladly recommend this work to our readers.

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*Clinical and Pathological Observations on Acute Abdominal Diseases due to Conditions of the Alimentary Tract, and the Uniformity of Their Origin.: The Erasmus Wilson Lectures, 1904.* By EDRED M. CORNER, B.Sc.Lond., M.A., M.B., B.C.Cantab., F.R.C.S.Eng. London: Archibald Constable & Co., Limited. 1904.

THIS little volume consists of numerous sections of varying length dealing with the different emergencies connected with lesions of the alimentary tract which come under the notice of the surgeon. In one of the early sections the author gives us a table of the acute abdominal cases admitted to St. Thomas' Hospital in the three years, 1900-1902. There were

456 consecutive cases, and in every instance the diagnosis was verified by operation or by autopsy. Appendicitis constituted 37 per cent; intestinal obstruction (other than intussusception), 24; intussusception, 15; perforations, 11; gynæcological conditions, 6; and other conditions, 7 per cent. Necroses of the alimentary tract are divided into two groups—(1) That which is due to microbes, viz., septic death, which is a very rapid process; and (2) that which is due to deprivation of blood, viz., aseptic death, which is a slow process. Many cases actually met with are due to the co-operation of the two causes.

Embolism and thrombosis are considered at some length in sections which deserve attention. With regard to appendicitis, the author considers that in every case in which the temperature remains up more than four days pus is present. "In most instances the abscess discharges internally, and disappears." The section on acute infective necrosis in strangulated herniæ, and that on Meckel's diverticulum are furnished with tables which may be commended to those who are interested in these subjects. Other sections which deserve special mention are those on the bacteriology of acute infective necrosis, and on acute infective necrosis of the alimentary canal in veterinary practice. Altogether this volume is well worthy of the attention of both physician and surgeon.

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*A Manual of Practical Ophthalmology.* By GEORGE A. BERRY, M.B., F.R.C.S. Edin. Edinburgh: Young J. Pentland. 1904.

THE number of text-books on ophthalmology is an ever increasing one, and the student has many to choose from. This small book, in which the author does not attempt to go into too much detail, but claims that it is "short and essentially practical," fulfils what he claims for it. We have no hesitation in recommending Mr. Berry's book. He takes up the subject systematically, and gives as full details in regard to diagnosis and treatment as is consistent with a book of this size.

In Section II he treats of errors of refraction and accommodation, going into the different explanations and theories sufficiently for students and practitioners who want merely a working knowledge for practical purposes. This, in our opinion, is quite sufficient for one who is not devoting his whole time to ophthalmology.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

### MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

**Relation of Alcohol to Arterio-Sclerosis.** By Richard C. Cabot (*Boston Medical and Surgical Journal*, 1st December, 1904).—A paper on this subject was read before the American Medical Association at a meeting on 17th August, 1904. The investigation was conducted in two parts.

I. An inquiry into the number of cases of arterio-sclerosis not referable to syphilis or to advancing age to be found among alcoholics.

II. An endeavour to determine in what proportion of cases of relatively early arterio-sclerosis of the peripheral vessels alcoholism was present.

The material for the study of the first part of the investigation was obtained from the Bridgewater State Farm and the Foxboro' Asylum for Dipsomaniacs; that for the second part was derived from the wards of the Massachusetts General Hospital. The records of the pathological laboratories of the Boston City Hospital and the Massachusetts Hospital were consulted.

His conclusions are, briefly, as follows:—

1. Of 283 cases of chronic and excessive alcoholism under 50 years of age, only 60 per cent showed any evidence of arterio-sclerosis.

2. Of 45 cases of arterio-sclerosis examined by Dr. Cabot, only 30 per cent gave any history of alcoholism.

3. Of 656 cases in which arterio-sclerosis was found *post-mortem*, only 95, or 14.5 per cent, were under the age of 50.

4. Of these 95 cases, only 21 per cent, or, if cases complicated by chronic nephritis be excluded, only 17 per cent appear to have consumed alcohol notably to excess.

The case of a young man of 36, who deliberately drank himself to death, and in whom the condition of the arteries at the *post-mortem* examination was found to be entirely normal, was cited.

The prevalent belief that arterio-sclerosis was, to a very large extent, dependent on alcoholism, and the strong statements made in standard works on diseases of the heart and blood-vessels, with reference to the part played by the excessive use of alcoholic liquors in the causation of arterio-sclerosis, led the author to undertake this investigation.

**Abscess in the Posterior Mediastinum.** By Piet (*Journal des Sciences Méd. de Lille*, 32, 1904; abstract from *Deutsche Medizinisch-Zeitung*, 1st December, 1904, M. Loeb).—The patient, a married woman of corpulent build, aged 57, came to hospital complaining of slight difficulty of swallowing and with the history that she had swallowed a bone four days before. This was on 16th March. Her general condition was good. Next day an examination of the œsophagus was made by means of a middle-sized bougie, when an obstruction was felt at the junction of the middle with the lower third. No foreign body was found. That evening the patient complained of the pain being more severe. It was referred to the neighbourhood of the 7th and 8th ribs on the right side, on the posterior and lateral aspects of the chest wall. At the base of the right lung there was slight dulness, the respiratory murmur was deficient, and a few crepitant râles were heard. On the two following days the patient's condition became worse. The pain and distress

were such that morphia had to be administered hypodermically. A period of great excitement followed; the patient became cyanosed; the temperature varied a good deal, the mean being 37.5°. During the 21st the pain was a little less, but the symptoms referable to the heart, viz., the cyanosis, rapidity and smallness of the pulse, became more marked. Death took place on the 22nd—six days after admission to hospital.

At the *post-mortem* examination, an abscess the size of a hen's egg was found in the posterior mediastinum, a little to the right of the middle line. It extended superiorly to the upper border of the depression at the root of the left lung, and inferiorly to the diaphragm. The abscess-cavity was bounded in front by the œsophagus, and the right vagus and its branches were bathed in pus. On the left side it almost reached the aorta, and on the right side it came to the part at which the parietal layer of the pleura is continued on to the lung. Posteriorly it was bounded by a membrane which stretched from the aorta to the right pleura, and it included the right azygos vein. The neighbouring connective tissue was œdematous as far as the anterior surface of the œsophagus and the posterior aspect of the pericardium.

The most of the symptoms could be explained by the appearances found. The dyspnoea and failure of the heart were probably due to a lesion of the vagus. How the abscess originated could not be discovered; there was no perforation of the œsophagus, nor any gangrenous peribronchial focus.

### Mental Symptoms Associated with Pernicious Anæmia.

By Pickett (*American Journal of Medical Science*, June, 1904; abstract from the *Boston Medical and Surgical Journal*, 1st December, 1904, Dr. Henry R. Stedman).—Five cases of this disease exhibited mental symptoms. The general picture presented was that of shallow confusion with impairment of ideas of time and place, which was more marked on awakening from sleep. Imaginary experiences of "yesterday" were constructed and related in a circumstantial manner. Illusions, particularly of identity, were common. Hallucinations pertaining to any of the senses appeared at times; there were also delusions based on these. They were usually transient, with manifestations of fear or agitation, but they might persist for considerable periods. In one of the cases they were systematised.

The psychosis of pernicious anæmia is to be regarded as a form of amentia, it being rare to have the spontaneous excitement by which some types of confusion merge into true mania.

## SURGERY.

By JOHN PATRICK, M.A., M.B.,

AND

ARCH. YOUNG, M.B., C.M., B.Sc.

**The Treatment of Tubercular Ascites.**—Schömann (*Centralblatt für Chirurgie*, 10th December, 1904) states that for three years he has dealt with ascites of tubercular origin by emptying the abdomen through a moderate-sized cannula and injecting a sterile iodoform glycerine emulsion containing from 1 to 5 per cent of iodoform. He begins with 1 to 2 centigrammes of the 1 per cent emulsion, increasing the concentration and dose with each injection made, according to the progress of the case, at intervals of four to eight days or more. By this method, seven cases from 2 to 19 years, all females, were treated and cured in three to ten weeks. In two children, the serous fluid did not reappear after two injections; in the 19-year-old patient, five injections were administered, and in the others three or four, before success was assured. The 19-year-old girl had also a tuberculous infiltration of the left apex, with evening temperatures up to 39° C. and night sweats. After the third injection

the fever lessened, the night sweats disappeared, and the lesion in the apex began to heal. This patient was under treatment from 1st July, 1902, till 9th September of the same year, when she was dismissed well, and has remained well since. The other cases were uncomplicated, their treatment being complete in three to seven weeks; in all, the ascites has not returned, the last of the cases having been under observation for nine months. The diagnosis in all cases was confirmed by tuberculin reaction. In none of the cases were there any evil consequences of the injections, except some rise in temperature immediately after injection. Iodoform poisoning did not occur in any case.

Schömann is convinced that this method is superior to laparotomy, which he has given up entirely. In laparotomy, besides the immediate danger from the anæsthetic, there are risks of occurrence of tubercular disease in the scar, persistence of fistula, ventral hernia. During the healing of the abdominal wound, the patient must remain in bed. Should the fluid reappear, it is necessary to wait till it becomes absorbed: if absorption does not take place a second laparotomy will be necessary—to which the patient will give a more than unwilling consent.

Against all these disadvantages, the method of puncture and injection is very simple—almost painless. The slow escape of the serous fluid will not bring about the collapse of even the weakest patient. Then the cases may be treated as out-doors if required, and if the fluid does return, the patients do not dread the simple puncture necessary to empty the cavity.

Lastly, the author points out that as these cases of his had all defied conservative medical treatment, he concludes that the iodoform is the most important factor in promoting cure.—J. P.

**The Technique of Neuroplasty.** By Hans Spitzzy, M.D., Graz, Austria (*The American Journal of Orthopedic Surgery*, August, 1904).—A critical and experimental investigation, made by the author into the present-day methods, is shortly outlined in this article, and fully illustrated by photographs and diagrams. With the view of finding out the kinds of paralysis most frequently observed, the most favourable method of correcting the same, and the proper choice of technique, a series of experiments upon rabbits and dogs was carried out. Rabbits were found unsuitable on account of the tendency to decubitus ulcers, suppuration, and an early fatal issue when their limbs were artificially paralysed by nerve section. Dogs proved quite suitable.

The first experiment consisted in grafting the peroneal nerve upon the tibial (i.e., the external popliteal upon the internal popliteal). The peroneal nerve was cut across 2 cm. below its origin, and the central nerve turned up and buried in the neighbouring biceps muscle. The peripheral end was inserted into a slit in the tibial nerve, and fixed there by a longitudinal suture passing through both nerves. Gradual recovery of function in the peripheral supply of the severed peroneal nerve occurred, and after four months muscular tone, electric excitability, and co-ordination were re-established completely. After five months the part was exposed, the turned up portion of the peroneal easily found, and no trace of union of this with the implantation-spot was visible.

Excitation of the nerves, mechanically and electrically, was then carried out with the following results:—

1. Irritation of the sciatic, or tibial, proximal to the implantation-spot, gave rise to movements in peroneal and tibial regions alike.
2. Irritation of the tibial, distal to the implantation-spot, caused twitching of muscles in tibial supply region only.
3. Irritation of the peroneal, distal to the implantation-spot, caused twitching in the peroneal muscle group, and "a gentle simultaneous twitching in the region of the tibial."

"As it might still be said that the excitation is conducted from the tibial to the peroneal through anastomoses or new nerve-conduits, the tibial nerve was cut 1 cm. distal to the implantation-spot."

4. Irritation of the tibial, proximal to the implantation-spot, caused new movements only in the peroneal region.

The proof of a new, full, physiological nerve-conduit was, therefore, considered established beyond doubt.

Histological proof was then supplied by microscopic investigation, and the passing of new nerve fibres from the tibial stem into the implanted peripheral peroneal stump was demonstrated.

A second case was investigated on the same lines, and with the same result. The tibial was grafted on the peroneal, and the latter, though of a much smaller cross-section, was found "equally able to neurotise the by far larger nerve." Other experiments on similar lines gave like results. Spitzzy draws the following conclusions from his own observations and those of other authors:—

"To connect the innervation-region of a paralysed nerve with the course of an intact one there are two different ways—

(a) Either a part with a central basis is split off from the intact nerve, and this part implanted into a longitudinal slit in the paralysed nerve, and fixed by a longitudinal suture (*central implantation*); or (b) from the paralysed nerve is split off as large a piece as possible, which has a peripheral basis, and is implanted in the same manner in a longitudinal slit in the intact nerve. If the paralysed nerve does not possess any intact sensory fibres, the whole (function-requiring) nerve may be used, and the central stump eventually be connected laterally to the function-giving nerve-stem (*peripheral implantation*)."

"The central implantation is to be recommended if there is in the vicinity of the paralysed nerve an intact nerve of less value, especially a motor-nerve, the cessation of whose function, in the event of failure, would not be too great a loss, e.g., the neurotisation of the facial through the spinal accessory, or the anterior crural through the obturator.

"The peripheral implantation is resorted to if only large nerves of equal importance are close by, e.g., median, ulnar, radial, and tibial and peroneal." It would be unjustifiably risky to split off a central part from the median to innervate the radial. Failure would mean great increase in the paralysed area.

Great importance is attached by Spitzzy to the kind of suture employed. Longitudinal or perineural sutures are much to be preferred to anything like transverse suture, which is apt to constrict nerve substance, destroy conducting power, and lead to a typical degeneration.

Spitzzy concludes by indicating the most suitable methods to follow in some of the more common forms of nerve paralysis.

Thus, in the arm only a partial peripheral implantation can be thought of, because of the importance of all the nerve stems and their function as mixed (motor and sensory) nerves. Owing to the contiguity of most of the chief nerve trunks the technique is not usually difficult. It may be carried out in the fore-arm, flexure of elbow, &c.

The facial nerve may be innervated by union with the spinal accessory before or after its perforation of the sterno-mastoid muscle.

In peroneal paralysis, peripheral implantation (partial or complete) of the peroneal nerve into the tibial in the bend of the knee, is easily accomplished; on account of the sensory supply of the peroneal either partial implantation should be chosen, or the central stump should be implanted or attached laterally to the tibial at the same time.

In tibial paralysis the converse operation is quite as easy, and its justification by experimental proofs has already been referred to.

In quadriceps paralysis Spitzzy has employed the obturator nerve for innervating the anterior crural. This is a partial central implantation; the preservation of adduction is provided for by employing only the superficial branch of the obturator, viz., that which supplies the adductor longus and the gracilis. The deep branch, supplying the hip-joint, the obturator externus, and the adductor magnus is not interfered with. The steps of the actual operation are given in detail, and there is said to be no great difficulty in their execution.--A. Y.

## DISEASES OF THE THROAT.

By JOHN MACINTYRE, M.B., C.M., F.R.S.F.

**Interstitial Injections of Paraffin in Spasmodic Coryza.** By Brindel (*Rev. Hebdom.*, 10th December, 1904).—Dr. Brindel, of Bordeaux, has tried the effect of interstitial injections of paraffin in cases of spasmodic coryza. The idea is to inject a small quantity of paraffin (melting point, about 16° C.) into the mucous membrane of the nostrils. The result is to produce a thickening or sclerosis round the injected paraffin, and this, to a large extent, prevents swelling. The treatment has been tried in five or six cases with good results.

**Collodium in the Arrest of Nasal Hæmorrhage.** By Pischel (Tenth Annual Meeting of American Laryngological, Rhinological, and Otolological Society).—Dr. Kasper Pischel recommends the use of collodium for the arrest of hæmorrhage from the septum and other parts of the nostrils after operation. After operation, the writer applies a little adrenalin to stop the bleeding, then collodium is dropped carefully on to the wound. Compressed air causes more rapid evaporation in the formation of a membrane, whitish in colour, which prevents any infection from the air and hæmorrhage. Dr. Pischel says he has used the collodium in thirty-one cases now, and has not had one where secondary hæmorrhage occurred. Care must be exercised not to allow the agent to drop into the pharynx, otherwise cough may be set up.

**Formalin in Dry Catarrh of Nose and Naso-pharynx.**—Dr. Adolph Bronner (*Proceedings of the Laryngological Society of London*, February, 1905) recommends the use of formalin in dry catarrh of the nose and naso-pharynx, especially when crusts are forming. Amelioration of the condition is at least claimed, and the offensive odour is removed. Dr. Bronner recommends the formalin to be used perhaps once weekly, in strength varying from 1 in 500 to 1 in 100, and if there be any large crusts they are first removed by forceps. In some cases it is necessary to use a weak solution of formalin in the form of a spray, 1 in 1,000, in order to remove the crusts.

**Infectivity and Management of Scarlet Fever.**—Dr. W. T. Gordon Pugh (*Lancet*, 4th February, 1905), in an address delivered before the Medical Officers of Schools' Association on the infectivity and management of scarlet fever, pays special attention to the part which the throat plays in the diffusion of infection. The conditions of the nostrils and throat, as well as the ears, which may be sources of infection, are carefully described, and the paper, judged from many standpoints, is notable in the sense that so much attention is paid to the upper respiratory passages being a cause of a diffusion of the disease in contradistinction to older papers which generally dealt more fully with desquamation. The views of the writer are well worthy of careful consideration.

## PUBLIC HEALTH AND INFECTIOUS DISEASE.

By HUGH GALT, M.B., C.M. GLASG., D.P.H. CAMB.

**Mechanism of Agglutination.**—A paper on the mechanism of agglutination, by J. A. Craw, Research Student, Lister Institute of Preventive Medicine, appears in the *Journal of Hygiene* for January, 1905.



The author gives a summary of his conclusions from the experiments conducted, the chief points in the summary being:—

1. The hypotheses of Pfeiffer, Emmerich, and Löw, attributing agglutination to a vital paralysis due to the action of a bacteriolytic enzyme, and those of Gruber, Dineur, and Nicolle, which ascribe the action to the glutinous nature of the membranes or cilia, are insufficient to account for the observed phenomena.

2. The views of Paltauf and Duclaux, that a specific precipitate is formed in the medium which mechanically carries the bacilli together, are sufficient, but probably do not account fully for the agglutination of washed bacilli.

3. The cell contents probably play an important part in agglutination, as the washed membranes are but slightly agglutinated,

4. Motile cultures of *bacillus typhosus* grown at 37° C., and non-motile cultures grown at 42° C., agglutinated equally well, the agglutinable substance probably being unchanged.

5. The law governing the fixation in *bacillus typhosus*, heated to 56° C. for thirty minutes, is probably different to that holding for living cultures, owing to modification of the agglutinable substance.

**Life-Tables.**—In the *Journal of Hygiene* for January, 1905, Mr. T. E. Hayward, Medical Officer of Health for Haydock, Lancashire, describes an improved method of constructing shortened life-tables for public health comparative statistics. Mr. Hayward points out that if a method can be devised by which, with but comparatively little labour, from the foundation figures of census enumerations and death records, a series of  $l_x$  and  $E_x$  values at intervals of five years can be obtained, with close approximation to the results which would be obtained by an extended method, whether "analytical" or "graphic," all will be gained which is required for the purposes of public health. The essence of Mr. Hayward's method is, therefore, to take a series of  $l_x$  and  $E_x$  values at five-yearly intervals instead of yearly. Instead of drawing a curve by a "graphic" process and measuring the ordinates required to be interpolated from this curve, each required ordinate is calculated by a formula which expresses its value in terms of the ordinates which are given as the foundation series of the curve. Thus, if four ordinates are given, separated by 10 units of measurement (years) in the base-line, which may be denoted respectively by the symbols  $u_{-15}$ ,  $u_{-5}$ ,  $u_5$ , and  $u_{15}$ , the central ordinate  $u_0$  is measured by the formula  $u_0 = \frac{9(u_{-5} + u_5) - (u_{-15} + u_{15})}{16}$ . Similarly, the yearly ordinates are obtained by a shortened method for obtaining the value of  $\frac{2P-d}{2P+d}$  for each year of age on the basis of interpolating a large number of intermediate ordinates. Mr. Hayward illustrates his method by applying it to the Brighton life-table for 1898-1900 (males).

### Books, Pamphlets, &c., Received.

An Elementary Treatise on the Light Treatment for Nurses, by James H. Sequeira, M.D. London: The Scientific Press, Ltd. 1905. (2s. 6d. net.)

Elements of Anatomy and Physiology, Especially Adapted for Nurses, by W. Bernard Secretan, M.B. London: The Scientific Press, Ltd. 1905. (2s. net.)

- The Open-Air Treatment of Pulmonary Tuberculosis**, by F. W. Burton-Fanning, M.D. London: Cassell & Co., Ltd. (5s.)
- Lateral Curvature of the Spine and Pelvic Deviations**, by Richard Barwell, F.R.C.S. Sixth Edition. London: Baillière, Tindall & Cox. 1905. (3s. net.)
- The Intestinal Catarrhs: being a Clinical Study of Colitis, Appendicitis, and their Allies, with a Special New Section on Sprue**, by Edward Blake, M.D. Second Edition. London: Henry J. Glaiser. 1905. (5s. net.)
- Clinical Hematology: A Practical Guide to the Examination of the Blood with Reference to Diagnosis**, by John C. Da Costa, Jr., M.D. Second Edition, Revised and Enlarged, containing Nine Full-Page Coloured Plates, Three Charts, and Sixty-Four Other Illustrations. London: Rebman Limited. 1905. (£1, 2s. 6d. net.)
- Premature Burial and how it may be Prevented, with Special Reference to Trance, Catalepsy, and other forms of Suspended Animation**, by William Tebb, F.R.G.S., and Col. Edward Perry Vollum, M.D. Second Edition, by Walter R. Hadwen, M.D. London: Swan, Sonnenschein & Co., Ltd. 1905.
- The Diagnosis and Modern Treatment of Pulmonary Consumption, with Special Reference to the Early Recognition and the Permanent Arrest of the Disease**, by Arthur Latham, M.A., M.D. Second Edition. London: Baillière, Tindall & Cox. 1905. (5s. net.)
- International Clinics: A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles**, edited by A. O. J. Kelly, A.M., M.D. Vol. IV. Fourteenth Series, 1905. London: J. B. Lippincott Company. 1905.
- A Handbook of Surgery for Students and Practitioners**, by Frederick Richardson Griffith, M.D. With 417 Illustrations. London: W. B. Saunders & Co. 1904. (10s. net.)
- Manual of Operative Surgery**, by John Fairbairn Binnie, A.M., C.M. (Aberdeen). With 559 Illustrations, a number of which are Printed in Colors. Philadelphia: P. Blakiston's Son & Co. 1905. (12s. 6d. net.)
- The Naked-Eye Anatomy of the Human Teeth**, by Thos. E. Constant. Bristol: John Wright & Co. 1905. (7s. 6d. net.)
- Lectures on Diseases of the Stomach and Intestines for Students and Practitioners**, by Boardman Reid, M.D. Illustrated. Bristol: John Wright & Co. 1905.
- A Text-Book of Legal Medicine**, by Frank Winthorp Draper, A.M., M.D. Fully Illustrated. London: W. B. Saunders & Co. 1905. (18s. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 18TH FEBRUARY, 1905.**

	WEEK ENDING			
	Jan. 25.	Feb. 4.	Feb. 11.	Feb. 18.
Mean temperature, . . .	39·7°	43·3°	42·3°	44·0°
Mean range of temperature between day and night, . .	24·4°	18·2°	20·2°	28·4°
Number of days on which rain fell, . . . . .	2	4	3	6
Amount of rainfall, . ins.	0·11	0·66	0·16	0·80
Deaths registered, . . .	309	295	288	305
Death-rates, . . . . .	19·9	19·0	18·6	19·6
Zymotic death-rates, . . .	2·4	3·7	2·4	2·2
Pulmonary death-rates, . .	7·3	6·0	5·6	6·0
DEATHS—				
Under 1 year, . . . . .	60	77	70	71
60 years and upwards, . .	63	57	56	55
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	1	5	7	3
Scarlet fever, . . . . .	1	...	...	...
Diphtheria, . . . . .	4	6	2	...
Whooping-cough, . . . . .	25	31	17	20
Fever, . . . . .	2	1	4	3
Diarrhoea, . . . . .	5	12	4	6
Croup and laryngitis, . . .	1	...	...	...
Bronchitis, pneumonia, and pleurisy, . . . . .	83	62	54	65
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup, . . . . .	20	22	15	12
Erysipelas, . . . . .	18	19	15	8
Scarlet fever, . . . . .	10	13	11	26
Typhus fever, . . . . .	...	...	...	...
Enteric fever, . . . . .	14	12	14	11
Continued fever, . . . . .	1	2	...	...
Puerperal fever, . . . . .	...	...	4	2
Measles,* . . . . .	122	140	115	119

\* Measles not notifiable.

SANITARY CHAMBERS,  
GLASGOW, 28th February, 1905.

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ORIGINAL ARTICLES.

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SOME CASES OF UTERINE MYOMA, WITH REMARKS  
ON THE INDICATIONS FOR OPERATION.<sup>1</sup>

By A. W. RUSSELL, M.A., M.B.,  
Assistant Surgeon, Samaritan Hospital for Diseases of Women ;  
Assistant Physician, Maternity Hospital.

THE purpose that I have in view to-night is to discuss and illustrate the indications for treatment of fibromyoma of the uterus, and to emphasise the desirability of early radical operation. By this limitation, I am debarred from detailed reference to questions of pathology or diagnosis, but it is impossible to avoid mention of certain points bearing on the choice of operative procedure. I shall now enumerate what seem to me to be the chief considerations that should influence the mind in deciding whether the treatment should be operative and what the operation should be.

1. *The anatomical varieties of fibromyomata*, according as they are *subperitoneal*, *interstitial*, or *submucous*, and whether the tumour is *sessile* or *pedunculated*, need only to be mentioned as very evidently influencing the choice of treatment, the submucous polypoid tumour being easily twisted

<sup>1</sup> Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 25th January, 1905.

off, while the predunculated subperitoneal growth may have to be removed by abdominal section, and both varieties of sessile growth and also the interstitial form may be treated by enucleation or by hysterectomy, in one or other of its methods.

2. *Hæmorrhage*, even with a small fibroid, may very seriously affect the general health from simple loss of blood, so that ultimately even one of the less risky operations may be impossible. The handicapping effect of hæmorrhage is well illustrated in the two following cases:—

CASE I.—Age 38, single, dressmaker, admitted into the Samaritan Hospital on 2nd July, 1904, complaining of menorrhagia for four years, and pain in the right side. She had consulted me about nine months previously for profound anæmia, with breathlessness and general weakness, and enquiry as to her menstrual functions led me to suspect a local cause for the profuse menorrhagia, and to suggest a vaginal or rectal examination. This was done, and she was afterwards admitted into a private nursing home with a view to proper examination under chloroform, and curetting as a probable means of at least temporarily diminishing the hæmorrhage, and so allowing her time to recruit her strength. The heart was not quite normal, the area being enlarged, the first sound loud and slapping, and the second accentuated. A smooth firm tumour extended about  $3\frac{1}{2}$  inches above the pubes. Supravaginal hysterectomy was done on 6th July, the ovaries and tubes being left behind. The uterus showed an extraordinary number of minute submucous fibroids, making the uterine cavity irregular, in addition to interstitial growths and subserous projections. Excepting for an accidental staphylococcus infection of the wound, which delayed healing for a week or two, she made a good recovery, and was dismissed on 12th August.

CASE II.—Age 42, married twenty-five years, no children, admitted into the Samaritan Hospital on 28th June, 1904, complaining of pain in left side of almost a year's duration, and of irregular profuse hæmorrhage. Since April, 1902, menstruation became more frequent and lasted longer, once even for sixteen days. Taken into the Victoria Infirmary, she was operated on for myoma, which was removed. About four months ago menorrhagia began again, any strain or exertion exciting it. As this patient had an invalid husband, and led an arduous life to obtain the means of living, and as

hæmorrhage was beginning to be almost constant, and therefore interfering with her work, it was decided to remove the uterus, though it was comparatively small, and the vaginal route was selected. The vessels were secured with catgut ligatures. Bleeding was observed to be unusually free and generalised, but it was arrested. The patient seemed to suffer from greater shock from the operation than is usual in vaginal hysterectomy, but no specially anxious symptom was noted till night, when she became restless and thirsty, and the pulse ran up to 140. There being signs of hæmorrhage, vaginal plugging with gauze which had been steeped in hazeline was tried. When I arrived later in the evening, I opened the abdomen and again ligatured the ovarian arteries. Saline fluid was infused subcutaneously, but the patient succumbed. Though there had been considerable hæmorrhage, there is no doubt that the previous losses of blood and the severe drain on her strength by her husband's ill-health contributed largely to the fatal result. The uterus bisected showed an interstitial fibroid in the upper part of the body of the uterus.

3. *Pain* is not necessarily present, but it may alone as a symptom necessitate operative procedures. The last patient on whom I operated is extremely interesting in this respect; and I now show the specimen removed by abdominal hysterectomy a few days ago. The uterus, as you see, is small, but there are in its tissue several small fibroids which undoubtedly caused the severe pain of which the patient complained.

CASE III.—Single, age 47, till three years ago an official in the Government service, but compelled to retire on account of her health, her somewhat taxing duties having proved too much for her, and digestive troubles resulting as well as nervous prostration. There was no suggestion of symptoms indicating pelvic disorder till August, 1904, although at irregular intervals she mentioned pain in her left side. Complaint of more severe pain in August led to an examination of the urine, and in September this pain was realised to have some relation to the menstrual periods. A month later, as it was more persistent, and as recovery after the period, which was now more profuse, was not complete, patient was examined in bed, and recto-abdominal palpation, the vaginal route being painful, discovered a slight irregular thickening of the uterine body more marked towards the left side. In

November, under an anæsthetic, two small fibroid nodules were distinguished in the body and another projecting more to the left about or just above the level of the internal os. The uterine cavity measured  $3\frac{1}{4}$  inches. The left ovary was larger than the right, and movement from the left side seemed to be more limited than in other directions. As the pain increased both in severity and duration, necessitating occasional hypodermic injections of morphia, operation was decided upon, and last Thursday I did an abdominal hysterectomy by the supravaginal method, but in addition dissected out the remaining stump of the cervix, according to the suggestion made by Mr. Bland-Sutton at the recent Oxford meeting of the British Medical Association. The patient is doing well.

4. *Growth in size*, even if the patient has been almost unconscious of it, may be a sufficient indication for operation, for size of tumour in itself may seriously add to the risk of operation. Although now and then one finds very remarkable cases of successful operation, such as that recently reported by Dr. J. Clarence Webster, where the tumour weighed 87 lb., and the patient herself only 91 lb. after its removal, still the usual experience is that large size adds so greatly to the risk that operation may be refused by the best and most experienced surgeons. I had at one time under my supervision, during the last few years of her life, an elderly single lady, who had carried about for many years a massive fibroid, so heavy that it interfered with walking, and more than once by suddenly rolling from one side to the other, as she moved to get out of bed, pulled her to the floor. She had been seen by Keith and Knowsley Thornton amongst others. The neglect of operative treatment at the proper stage undoubtedly shortened life, besides interfering for many years with the enjoyment of its ordinary amenities. I give here the notes of a case where the size of the tumour became considerable before the patient in any way felt it inconvenient, but it almost suddenly made operative interference an urgent necessity. I also show you an admirable drawing of the tumour, in section, made by Dr. John Lindsay. The tumour itself was shown at a previous meeting of the Society. It weighed  $9\frac{3}{4}$  lb.

CASE IV.—Age 45, married, admitted into the Samaritan Hospital on 29th July, 1903, complaining of pains in her sides for about a fortnight, with headaches and general malaise. She had had two pregnancies, the last resulting in a living child five years ago. Menstruation had been regular, and



FIBROMYOMA OF UTERUS SHOWING NECROBIOSIS.  
(DR. RUSSELL—CASE IV.)





there had been no intermenstrual discharge till a fortnight ago, since which time patient had also noted some incontinence of urine. The urine, on admission, was small in quantity, 30 oz. in twenty-four hours, and showed a trace of albumen, a few pus cells, large epithelial cells, and a few granular and hyaline tube-casts. She first noticed a lump on the left side four or five years ago, but there was no pain nor inconvenience, and she gave it no attention. She took a cold a fortnight ago, and had since felt pains in the sides, but said she was more upset by coming into the hospital than by any discomfort or suffering.

Inspection of the abdomen showed a large irregular swelling, more prominent centrally and to the right than on the left side. The tumour was smooth and somewhat elastic, and there was considerable tenderness on palpation of the upper abdominal region. It extended upwards on the right side, close to the ribs, but there was a clear percussion note for about three inches on the left side. History, symptoms, and examination alike pointed to the probability of the tumour being ovarian in origin. I operated on 27th July. After the patient was fully under the influence of the anæsthetic, I palpated the abdomen carefully, as it had assumed a different shape, the rounded projection in the right hypochondrium being more marked, and I then suggested that the tumour felt more like a uterine enlargement. On entering the peritoneal cavity, I found numerous adhesions, especially over the upper and right aspect, where there was at the projection above noted a thick adhesion to the omentum, and probably to the under surface of the upper abdominal wall, if not also to the liver. These being carefully separated the tumour was found to be uterine, with tremendously enlarged veins. The right Fallopian tube and its appendage were seen to be abnormally large, and a sudden gush of white material, very like pus, was observed to flow from the neighbourhood of the tube and ovary while these were being handled. The left broad ligament was ligatured from above downwards with catgut, and the plexus of veins was noted as being greatly distended and tortuous. The bladder was now separated and the cervix cut across, the vessels being secured in the process. The right broad ligament, however, could not be tied off from below upwards owing to the extension of the tumour under the peritoneum on the right side and the adhesions above. The latter were first dealt with, and then the tumour was shelled out of its peritoneal covering, and the ligature of the vessels completed. The operation was completed in the usual

way, about three pints of warm saline solution being left in the abdominal cavity. The patient had persistent nausea for a day or two, but otherwise did well, and was discharged within four weeks of the day of operation. The tumour measured  $27\frac{1}{4}$  inches in circumference at its long axis, and it weighed  $9\frac{3}{4}$  lb. The photograph shows that necrobiosis has commenced near the centre.

5. *Growth in size* usually causes other and sometimes very serious symptoms owing to *pressure* on other organs, for example, on the blood-vessels or nerves, resulting in one-sided oedema of the ankle and leg, pain like sciatica, varicose veins, or thrombosis. Continued pressure may so affect the blood-vessels that phlebitis may result. This finds illustration in the following case :—

CASE V.—Age 40, single, cook, seen November, 1892, owing to great swelling of the left leg and severe pain at a spot on the calf of the leg. This developed into a regular phlebitis, which it took about five months to cure. The tumour in the pelvis had, in the meantime, advanced to the level of the umbilicus. She was kept persistently on ergot, and it was calculated that in less than a year she had taken 50 oz. of it without any manifest effect. This patient was not operated on, as she refused permission, and she had ultimately to leave her situation. The tumour now reaches practically to the sternum. She is anæmic in appearance, and is able for little work.

6. *Another result of pressure* is seen in the urinary troubles that arise. *Frequency of micturition* may be and is often due to a small fibroid in the anterior wall of the uterus, as in a case at one time under my care in which there was very persistent frequency of micturition and irritability of the bladder. A small fibroid was discovered pressing on the bladder. This was removed by anterior colpotomy, which only gave very slight relief, probably owing to adhesions subsequently formed, and the condition was only properly relieved a year or so later by hysterectomy. There may, on the other hand, be retention of urine, due to a small fibroid near the fundus or in the posterior wall retroverting the uterus and dragging the bladder backwards so as to stretch the urethra and narrow it, or to the direct pressure of a fibroid becoming incarcerated in the pelvis, as in the following case :—

CASE VI.—Age 40, unmarried, housemaid, admitted into

the Samaritan Hospital on 11th July, 1903, complaining of pain in bladder and retention of urine, also pain in sacral region. Menstruation was regular, without pain, and not excessive. Patient had always enjoyed good health, and had nothing to complain of till about ten days ago, when she found she could not pass water. Her doctor passed the catheter twice a day, and three times on the following day, and once next day, after which she micturated without difficulty till her admission. On admission, however, she was in great distress, the bladder being distended to the umbilicus, and 37 oz. of urine were drawn off by the catheter. Besides a heavy deposit of phosphates, there was a trace of albumen in the specimen examined. On two successive days 20 oz. and 16 oz. were removed, but on the day before the operation urine was passed naturally. The tumour was found to be a dense fibroid, filling the pelvic cavity and extending upwards half way to the umbilicus.

I operated on 15th July. The peritoneal cavity was entered with a little difficulty, as the peritoneum had been pushed up by the distended bladder almost to the umbilicus. The removal of the tumour was afterwards easily accomplished, beginning with the left broad ligament, and cutting across the cervix before ligaturing the right broad ligament. Convalescence was without incident, and she was dismissed four weeks after admission.

7. *Constipation and, ultimately, intestinal obstruction may result.*

8. *Pregnancy of the myomatous uterus* is sometimes a very serious and not altogether a rare complication. Few more difficult problems in treatment are set for the gynaecologist, but this is too large a subject for adequate treatment in the present paper, and I take only this passing notice of it.

9. Reference must be made to the *frequent association of tubal and ovarian disease with myoma of the uterus*. Statistics show this very clearly. Dr. Constantin, a French surgeon, in reporting 208 cases, noted 72 (or 34·6 per cent) with appendages affected. Mrs. Scharlieb, in a recent paper, mentions about 25 per cent, while Dr. Cullingworth notes only about 5 per cent, but he had excluded ovarian cysts, and included only what condition seemed to have a direct relation to the fibroid. I have noted this fact so often, that I am surprised now when I see no change in these structures.

I had one specially interesting case of this kind where the myoma itself had undergone calcareous degeneration, and

there was an unusually large blood cyst on the left side, measuring 6 inches in its longest diameter. Besides cystic ovarian disease, breast tumours are sometimes found, as in the following case:—

CASE VII.—Age 45, single, a domestic servant, admitted into the Samaritan Hospital on 29th June, 1904, complaining of menorrhagia of 12 months' duration. Menstruation began at 14, regular 28-day type, lasting three to four days, without pain. A year before admission menstruation began to be more profuse and to last for seven days. It soon began to come at shorter intervals. She never had a "flooding," however, till the time of her visit to the dispensary a month before admission. Ten weeks ago severe pain began in the right iliac and inguinal regions and down the front of the leg. There was also frequency of micturition and difficult defæcation. There was a small hard tumour in the left breast.

On 5th July, I did a supra-vaginal hysterectomy in the usual way, removing at the same time the right ovary, which was cystic, but leaving the left ovary. I then removed the part of the left breast containing the tumour.

The patient made a good recovery, and was discharged from the hospital four weeks after admission.

10. *Cessation of a growth, and even spontaneous disappearance of a fibroid*, must be admitted as possible, though it is so unusual and so uncertain that it would be foolish to calculate upon its occurrence. One case in my experience deserves noting. I was asked to see a i-para at full time, where obstruction to labour was suspected. I found a tumour, which seemed as large as my fist, in Douglas' pouch, and below the brim. The patient was anæsthetised later on, and the tumour was pushed up into the abdominal cavity. Labour, which had been threatening, now came on, and the patient was safely delivered. Nothing untoward happened. The tumour was felt afterwards; and the patient, at the end of the attendance, was warned of this tumour and its risks if pregnancy again took place. When she was about four or five months pregnant she came again to me, and I advised her to go into a nursing home, after examining her under an anæsthetic, and convincing myself of the presence of a movable tumour. I opened the abdomen and found only a small nodular interstitial tumour on the posterior wall of the uterus, about halfway between the fundus and the internal os, and therefore hardly in a position to have got into the pelvic

cavity at full time at the previous confinement. On the surface of the uterus at the situation of this tumour, there was an oval slightly puckered scar, the only indication left of the pedunculated subserous tumour which caused the obstruction on the previous occasion, and had since mysteriously disappeared. I, of course, did not interfere with the interstitial tumour, and the patient went to full term. She has since that time had another child, and I satisfied myself that the tumour is still there and not increasing in size, probably because of the recurring pregnancies.

11. *Degeneration of the ordinary myomatous structure* is very apt to take place, and we have such conditions as fibrosis, calcareous degeneration, necrosis, including that form known as necrobiosis without germ infection, as well as actual sloughing, cedematous and fibrocystic, or even myxomatous degeneration. Sarcoina is probably not a degeneration, but a new growth, or another form of development, and carcinomatous degeneration is certainly a misnomer. Any of these forms of degeneration increase the risk to the patient if there is delay in operating.

12. I have reserved for my last point, in this part of the subject, *the development of cardiac disease* in association with, and probably as the direct result of, fibromyoma. I have at present under my care four illustrative cases, two of them operated on nearly a year ago, one last week, and the fourth waiting operation.

CASE VIII.—A widow, age 46, complaining of pelvic pain more or less for fifteen years, and having tried most of the forms of treatment, including tamponade, applications to endometrium, blistering, and the usual drugs. Patient was reduced to a state of chronic invalidism, so that the slightest exertion induced fatigue, and brought on her pelvic pain. Finding the uterus slightly enlarged and irregular, owing to what felt like small fibroid masses bulging specially to the right side where pain was most severe, and confirming this under an anæsthetic, I advised operation. Mr. Parry, who was consulted, confirmed this opinion, and performed a supra-vaginal hysterectomy, removing the appendages at the same time.

The patient is now, a year after operation, in the enjoyment of better health than she has had for a number of years, has no pain, and is able for the ordinary duties of daily life. It is necessary to note that after so long a period of invalidism, during which also the area of cardiac dulness had extended

out to the nipple line, and there was developed that cardiac weakness now known to be directly associated with an essential hypertrophy of the heart, and in addition there was established a distinct neurosis, it was not to be expected that normal health would be immediately restored by the operation; but in this case, in spite of a worrying cystitis, there was a consistent improvement, so that in a year's time considerable exertion is now no longer a pain, but a pleasure to her, and her bodily strength seems likely to be completely renewed.

CASE IX.—Married 7½ years, no children, age 44, first seen by me in February, 1898, when a small fibroid projection was felt to the right of the uterus, and another rather more prominent on the posterior wall. This consultation was mainly owing to sterility. In 1903, as constitutional symptoms, *e.g.*, inability for ordinary exertion, tendency to menorrhagia, and pain, were more urgent, careful examination was made, and the tumour was found to be very much larger. As, on this account, there seemed also to be danger of pressure giving trouble very soon, operation was advised. In April, 1904, I did a supra-vaginal hysterectomy, leaving the ovaries, which were apparently healthy. Her recovery from the operation was without incident; but the constitutional weakness, due to the prolonged semi-invalidism and to the cardiac disturbance, took months to disappear, and even yet there is a certain degree of cardiac enlargement.

CASE X.—Married, age 48, one child now grown up, complaining of vulvar pruritus as the most distressing symptom, but found to be suffering from a myomatous condition of the uterus, associated with an occasional and very irritating leucorrhœal discharge. Such causes of pruritus as diabetes, parasites, &c., were carefully excluded, and local treatment, as advised by Dr. Morton, was then used effectively, so as to check the pruritus and relieve the resulting dermatitis, the uterus having been in the first instance curetted. The most interesting feature of this case, however, is the sallow anæmic appearance, amounting almost to a cachexia, together with the enlargement of the area of cardiac dulness quite to the nipple line, together with considerable physical weakness. When such a complex of symptoms occurs, the time has come to consider radical measures, whatever be the size of the tumour.

The fourth instance of essential cardiac hypertrophy is already recorded in this paper as Case III. In this, as in those already detailed, there was remarked the same complex

of symptoms—cardiac hypertrophy, sallow, anæmic, anxious appearance, physical weakness and nervous excitability, which would doubtless in time have ruined the patient's health, and added greatly to the risk of an operation postponed to a later date to see whether the tumour would, in the meantime, become larger.

The foregoing considerations, as illustrated by cases in my own experience, have convinced me, as others are being convinced, that surgical interference should take place sooner in cases of uterine fibromyoma. The day of medical treatment so-called is almost over, at least so far as drugs go; and we may here dismiss ergot, hydrastis, and hamamelis, the bromides and iodides, iron, and the other astringents, gland extracts, thyroid or mammary, as at the best only palliative measures. Electricity has had a wonderful vogue, and possibly it helps to check hæmorrhage, and the same effect may be credited to Pincus' method of applying steam by *zestocausis*, but we put these in the same category.

It may safely be said that the outstanding indication of the cases to which I have referred, and of the extensive recent literature on the subject, is early recognition of the disease and early operation. By doing so, we avoid the deterioration in health and the essential cardiac disorder, the complication of size and its attendant evils, the degeneration of the growth itself, and the development of disease in adjacent organs. Hysterectomy for myoma seems to be passing through the same experience as did ovariectomy in days that are within the memory of most of us. No one would now think of leaving an ovarian cyst or tumour to develop; and the day is near when, owing to improved technique ensuring greater safety, the discovery of any myoma by the gynecologist will be the signal for its early removal by one of the approved methods.

I wish to complete this communication by reference to the different operative methods, though it is impossible in the compass of this paper to discuss them critically. They fall into two classes.

1. Operations that aim at checking the growth, and even the possible disappearance of the tumour, by lessening the nutrition of the tumour.

Only a word needs to be said on this method. It is too uncertain to be relied on whether we adopt Tait's method of tying the ovarian arteries and removing the appendages, or Gottschalk's plan of ligaturing the uterine arteries, *per*



*vaginam*; or as Altuchneff recommends by tying them high up in abdominal section, or the more thorough and more frequently successful plan proposed by Martin, of Chicago, who ligatures the whole broad ligament.

The indications for more radical procedures than those methods make possible, are found in the fact that only interstitial fibroids are likely to be influenced, and also that it is not always possible to separate and ligature both sets of appendages. Such an operation may, nevertheless, be the only one available, and there is conclusive evidence that it is sometimes effective in arresting growth. The first patient on whom I operated for fibroid was a case in point. She was a housemaid, aged 35, suffering from a large pedunculated subserous fibroid, with projecting fibroid bosses here and there over the uterus, itself myomatous. After taking away the large tumour, I decided to remove the appendages. I saw and examined this patient two or three years later, when I found her in robust health, and the uterus was already distinctly atrophied.

2. The other class of operations involves the removal of the tumour alone (myomectomy), or of the tumour and uterus with it (hysterectomy or hysteromyomectomy) either by the vaginal or by the abdominal route. I shall not attempt to detail the indications that rule the choice of any variety of this operation. They are probably already clear enough to the minds of all. It is sufficient for me to say that I have usually done an abdominal hysterectomy by supra-vaginal amputation, and that, in addition, I am inclined now to excise the little stump of cervix in the way recommended by Bland-Sutton, a manœuvre that does not add to the risk of the operation, while it saves from after trouble of any kind, panhysterectomy being the ideal operation, but being, according to methods hitherto practised, a more serious risk than the method of supra-vaginal amputation usually followed. In a final word, a review of my own comparatively small experience, and a study of the most recent work of others, convince me that other indications demand radical and earlier operative measures besides the classical reason of hæmorrhage, and that especially there are liable to result by delay in operation, not only a growth in size and a degeneration or interference with the proper activity of other neighbouring organs, but also a distinct myomatous cachexia, indicated specially by the essential cardiac hypertrophy, blood changes, and consequent physical weakness, which lessen the power of recovery, and therefore add considerably to the risk of operation.

## MOVABLE DISPLACEMENTS OF THE KIDNEY.

By DAVID NEWMAN, M.D., F.F.P.S.G.,  
Surgeon, Glasgow Royal Infirmary.

(Continued from p. 99.)

The *prognosis* may be considered under three heads—

1. As regards the danger to life.
2. In relation to general health.
3. In respect to morbid changes in the kidney.

Keppler regarded movable kidney as a direct menace to life, and under this conviction he recommended very heroic measures. In this, he was wrong, and consequently his influence has done much harm. Naturally, serious men considered his propositions, and in rejecting them were induced to go too far in the opposite direction. I have not had a case of movable kidney where death has been the result of the displacement. Keppler claims two. These were regarded as cases of simple movable kidney, it being proved that at least there was present no other malady than the displacement of the kidney.

The disturbance and discomfort induced by movable kidney depends upon many circumstances. Those who lead sedentary lives, and who can take care of themselves, suffer little in health. The abnormal mental derangement commonly associated with movable kidney may, however, unfit the patient for social life; and while not unfrequently the medical attendant may have little regard for what he calls "hysteria" or "hypochondriasis," to the patient her troubles are very real. I have seen several cases where insanity has resulted, and Keppler describes a case where the patient shot himself during a fit of melancholia six years after the first appearance of the disease. Patients who have to lead active lives, find their movements and activity severely hampered by the suffering induced by bodily exercise; and as time passes matters become steadily worse, until ultimately they are compelled either to seek relief by having the kidney fixed, or by relinquishing regular occupation. The majority of patients lose flesh, and become anæmic and flabby. While the tendency is for the movements of the kidney to increase, and the functional disturbance of other organs to become more pronounced, there is also in a large proportion of cases, by a loosening of the attachments of the other abdominal

viscera, a degree of enteroptosis. In such cases the symptoms of chronic gastritis and dilatation of the stomach become more marked, and the patient may also suffer from prolapse of the rectum, bladder, and uterus, flaccid reducible hernia, or displacement of the liver and spleen. The movable kidney, by causing kinking of the bowel, may also lead to obstruction, or by dragging upon the gall-bladder or the duodenum may induce jaundice. On the other hand, rotation of the kidney or extreme displacement, by obstructing the escape of urine or by impeding the circulation, may produce degenerative or inflammatory changes in the pelvis or parenchyma of the affected organ, such as hydronephrosis, or by septic infection, pyelitis, pyonephrosis, or pyelo-nephritis. Mobility of the kidney also renders it more liable to such diseases as stone, tuberculous disease, or cystic degeneration. Those in whom the "nervous" or "hysterical" elements are highly developed are looked upon as the least favourable cases. Doubtless, in many the suffering may appear to be magnified, and we may require to wait a considerable time before we see any good results from treatment, but as far as my experience goes these are by no means hopeless cases. Very often, in the long run, excellent results are obtained, although the immediate result of the operation may be disappointing. If the patient be carefully watched and cared for, a gradual and steady improvement may be observed, which, after months or perhaps years, eventuates in a good recovery to health.

The *treatment* necessarily depends upon the requirements of the individual case, and upon the class to which it belongs. I may here repeat the classification which was given when we were considering the question of symptomatology.

1. Those in which the displacement does not give rise to much discomfort or functional disturbance, the mobility of the organ being discovered probably by accident.

2. Those in which gastro-intestinal symptoms are pronounced, and, after a time, induce marked neurasthenia.

3. Those in which ill-defined pain, generally abdominal, but not specially referable to the renal region, is the most marked symptom.

4. Those in which the pain is distinctly renal, and is associated with—

- (a) Albuminuria only.
- (b) Albuminuria and tube-casts.
- (c) Hæmaturia and, in some, blood-casts.
- (d) Transitory hydronephrosis.
- (e) Pyonephrosis.

5. Those in which both local symptoms and reflex functional disturbance are marked.

The essential element in all *palliative treatment* is rest. When it can be got, not only may relief be obtained, but if prolonged and complete rest in bed can be carried out, a cure may be effected. To patients suffering from this affection, all forms of exercise involving active and sudden movements of the body, such as running, dancing, jumping, or travelling over rough roads, must be strictly forbidden, and even long continued standing or walking should be avoided. In many cases of movable kidney the displacement is due to the absorption of circumrenal fat, sometimes as part of a general emaciation, at other times due to local causes. Rest in bed with general massage, omitting any manipulation in the region of the kidneys, together with careful dietary, may induce not only a re-deposit of subcutaneous fat, but may also, by padding out the structures round the kidney, lead to the organ becoming fixed in its normal position. I have seen a considerable number of cases, especially in emaciated young women, where this mode of treatment has given excellent results. The difficulty I have experienced has been to induce them to remain in bed long enough to effect a complete cure.

In the first class it has been asserted that, seeing there are no symptoms, no treatment is required; but, as I have demonstrated above, negligence in this respect may lead to much harm. So far as the physical condition is concerned, the evident indication is to endeavour to replace the organ in its normal position, and to keep it there. With the patient in the recumbent posture, the kidney should be replaced by manipulation and gentle pressure. This is usually very easily accomplished: the difficulty is to keep it in position without exerting undue pressure upon it or upon the neighbouring parts. Various methods have been proposed—tight bandages or belts round the abdomen, with a pad over the kidney to give the pressure more pointed effect: elastic bandages applied in a similar way, and trusses, have all been employed for the purpose of fixing the kidney by external support. It is only in a few cases that firm pressure is bearable. In many the suffering is increased by pressure, and the patient frees herself of the appliances as soon as possible.

Corsets are of the greatest value when fitted in a proper way. They may be made of jean or of elastic material, must surround the abdomen completely, extend from the line of Poupart's ligament to the level of the nipples, and while fitting

the body accurately and firmly they must not press unduly on any part. In order to fit closely along the line of Poupart's ligament without causing discomfort to the patient while in the sitting posture, it is necessary to make a gap over the symphysis pubis by having the busks shaped so as to form an arch. For many years I have employed an elastic corset made by sewing strips of elastic bandage together, united in the middle line in front by means of steel slips or busks similar to those used in fixing corsets, but these slips require to be specially made in order that the corset may come sufficiently low down to give full support to the lower part of the abdomen. Whether the corset be made of elastic material or not, great care must be taken in adjusting the corset properly in the following way:—

The patient should have the bowels well moved every morning; then, before getting up for the day, she should slip over the lower extremities and upwards round the abdomen a tight fitting silk or woollen jersey, apply over the region of the kidney an air-pad, and then buckle over it the corset or elastic bandage. The air-pad is so made that it may collapse while the patient is putting on the bandage; after the bandage has been adjusted the pad is inflated by means of a tube carried to the mouth, and provided with a stop-cock. These pads are made by Messrs. Hilliard & Son, Renfield Street, Glasgow. It is a matter of great importance that the elastic bandage or corset should be thoroughly well fitted and accurately applied. This cannot be insisted upon too forcibly. I have known many instances where the patient derived benefit when I supervised the application of the bandage myself, or when it was looked after by an experienced nurse: whereas when it was undertaken by the patient herself, or by friends, the bandage proved useless. Whether band or truss be employed, it is necessary that it should fit and be applied in such a manner that the patient can keep it on continually without discomfort. Even although the symptoms disappear for the time being, if the patient suffers from pressure of the appliance she is certain to discontinue its use before long. Such treatment is only palliative, and may be adopted with advantage in the first class of cases only. Even in these the patient should be warned that the employment of mechanical supports is simply an endeavour to supply a want, and the result cannot be guaranteed. Unfortunately, in knowing this the patient is liable to refuse to wear the bandage or belt where there is no prospect of producing a complete cure.

There are many instances where the patient cannot bear

any form of mechanical appliance on the abdomen, and this is specially so in class 3. Pressure seems, in fact, to increase rather than to alleviate the suffering. The organ is fixed so long as the pressure is applied, and is thereby prevented coming in contact with or dragging upon other organs in the abdomen, and in this way gastric troubles are for the time being relieved. But while these symptoms become less, their relief is more than compensated for by an increase in the renal pain induced by continual pressure upon an irritable kidney.

When severe symptoms are not alleviated by other means, or when the patient has comparative comfort only when strict attention is paid to certain rigorous conditions, the irksomeness of which renders her life miserable and useless, then the urgent demands of the patient make it necessary that something should be done to cure the disease. When the patient is able to move about, or to sit up in comparative comfort with the assistance of a bandage or corset, she may not be disposed to consider the question of operation, but it is otherwise when little or no relief is derived from the milder modes of treatment. When severe pain is experienced, extending to the lower part of the abdomen, and along the course of the crural nerves, the loins and thighs, increased by any exertion or even by movements in bed, sometimes amounting to paroxysms resembling renal colic, and occasionally accompanied by fainting, sickness, and persistent vomiting, then I do not see why the only chance of relief should be denied to the unfortunate sufferer. Clearly, to my mind, an operation should be advised when severe symptoms are not relieved by rest in the recumbent posture or by mechanical appliances.

Before considering the question of operation, it may be advisable to say a few words respecting certain palliative measures which have been proposed. Electricity, friction, cold baths, and massage have all been recommended; they are absolutely useless. When a "renal crisis" occurs, indicating strangulation of the kidney, violent renal pain, sickness, frequent micturition, enlargement and excessive tenderness on pressure over the renal region—complete repose in bed should be advised during the attack, and this may be assisted by the application of hot poultices made with boiling water containing carbonate of ammonia (30 grs. to the oz.), fomentations, hot air bags or hot sitz bath, by the application of anodynes over the seat of pain, or the administration of morphia by subcutaneous injection or as a suppository. Dry-cupping, or the application of leeches, I have found beneficial in extreme cases

of renal colic. In cases of acute transitory hydronephrosis, dilatation of the large bowel with a hot saline solution produces almost immediate relief, but to attain this end very full distension of the colon is necessary. It is most readily obtained in the elbow-knee position. In other cases palpation of the abdomen in the position just referred to may give relief by untwisting the kinked ureter.

Once the tone of the abdominal muscles has been lost it is very difficult to restore it, but every endeavour should be made to improve the general health by the administration of tonics, the careful regulation of the diet, by moderate exercise, and by a quiet and regular mode of life. Regulation of the bowels is a point which must be carefully attended to, as any accumulation invariably aggravates the inconvenience of movable kidneys. Where there is marked evidence of gastro-intestinal disturbance, it is necessary to treat the condition not only on general principles, but with special reference to the cause.

*Operative treatment.*—Nephrectomy, the premier operation for movable kidney, was first performed through a lumbar incision by Gilmore, in December, 1870, upon a negress, aged 33, in the fifth month of pregnancy, and the patient made a good recovery. The operation remained unimitated until March, 1878, when Martin, of Berlin, performed an abdominal nephrectomy for painful right movable kidney. His second operation was performed in August, and his third in November of the same year. All were successful, and for some years subsequent to the date mentioned, nephrectomy was repeated by numerous surgeons with varied results.

In my book on *Surgical Diseases of the Kidney*, p. 62 *et seq.*, I give the statistics of nephrectomy for movable kidney up till 1888, and at p. 65 I made the following remarks:—

“The foregoing table shows the number of nephrectomies performed for movable kidney. Of these 30 operations, 21 patients recovered, and 9 died. In 17 cases the excised kidney was normal. Abdominal nephrectomy was performed 24 times (this includes two cases in which both the lumbar and abdominal incisions were employed), and the lumbar operation was adopted in the 6 remaining cases. Of the former, 3 deaths occurred as a consequence of uræmia or suppression of urine, 2 from septicæmia, while collapse, chronic peritonitis, cedema glottidis, and retention of urine, each account for 1 death. The case of Dr. Polk should

hardly be included in the statistics of abdominal nephrectomies, the operation, strictly speaking, being an extra-peritoneal one, and the movable kidney the only one of which the patient was possessed. All the patients upon whom lumbar nephrectomy was performed recovered. The mortality, 30 per cent, although not so high as in nephrectomies performed for other diseased conditions, is sufficient to prevent extirpation of the kidney being resorted to, except in extreme cases. It is a fact worthy of note that in the 10 cases last recorded, there have been no deaths."

Since 1888, for movable kidney only 12 nephrectomies have been performed. Those added to the 30 cases included in my statistics give 42 cases in all, with 11 deaths, lumbar nephrectomy giving a mortality of 9 per cent, and abdominal nephrectomy a mortality of over 32 per cent. The mortality of 30 per cent in all is too disastrous to be faced in proposing an operation for a disease which does not cause death, consequently nephrectomy for movable kidney is now universally condemned, even although in the 10 cases last recorded there have been no deaths. In cases of movable kidney where the organs are the seat of organic disease, unless the diseased condition be strictly limited to the movable kidney, the operation seems unjustifiable on the ground of the very high mortality; and where the case is one of uncomplicated movable kidney, then extirpation should not be thought of till nephrorrhaphy has been tried and failed. Nephrectomy is to be recommended only in cases where such diseases as extreme hydronephrosis, pyonephrosis, pyonephritis, tuberculous disease, stone, or malignant tumour have become engrafted on the movable kidney, or where the mobility has been induced by the diseased state of the organ. In movable kidney the site of cystic degeneration, nephrectomy has always been fatal. It is not right to excise such an important organ as the kidney before making an endeavour to save it by a less heroic operation. Excision should only be employed when all other measures have failed and life is seriously threatened, or where there is complete degeneration of the movable kidney. When excision is to be performed, it should be done through a lumbar incision. Twenty years ago, nephrectomy as an operation for movable kidney was superseded by a much more successful surgical procedure, namely, nephrorrhaphy. When I saw my first case of movable kidney in 1880, with the late Dr. Yair, of Kilcreggan, I proposed not to excise the kidney, an operation I then knew



to have been done several times for the disease from which she was suffering, but to stitch it to the abdominal wall. At that time, however, I did not feel justified in advising her to have the operation performed, as I still entertained the hope of some relief being derived from external appliances, and, besides, the operation had never been performed to my knowledge. Stitching the kidney by means of sutures to the abdominal wall seemed in itself a less dangerous operation than excision. In 1874, Dowell, of New Orleans, attempted to fix the left kidney by passing a hair suture through the cortex and the abdominal parietes, and allowing it to remain *in situ* for three months. The operation, however, was unsuccessful, and the kidney was ultimately excised.

Dr. E. Hahn published, in the *Centralblatt für Chirurgie* for 23rd July, 1881, his first two cases. "In one case there was a strong suspicion that in one kidney, and possibly not the floating one, there was a calculus, while in the other both kidneys were movable."

His first operation was performed in April, 1881, upon a woman, æt. 38, unipara, who suffered from severe pain, associated with movable displacement of the right kidney, and with a suspicion of a renal calculus on the right side. In the second case, the patient suffered from similar symptoms, and both kidneys were found to be movable, the right, however, more so than the left. The first case was quite successful, the second partially so.

The operation consisted of cutting down upon, but not opening, the capsule of the kidney, by an incision made along the edge of the sacro-lumbalis muscle, from the lowermost rib to the crest of the ileum. The adipose capsule was drawn into the wound and stitched to the muscle and fascia by six or eight catgut sutures.

In one of his cases the kidney became movable after the operation, and in order to get greater fixity, he subsequently recommended opening the capsule and stitching it to the more superficial tissues at a point corresponding to the lowest limit of the area of mobility, so as to avoid straining the adhesion with the patient standing upright. The operation promised to be capable of removing all the disagreeable symptoms resulting from mobility of the kidney: by the posterior incision the peritoneum was not opened, and, above all, the patient was not deprived of any urine-secreting tissue. The only fault it appeared to have was that, as carried out in the earlier cases, it did not fix the kidney securely enough. This was doubtless due to want of knowledge in pathological

details, all cases being operated on in one way. In cases where the kidney is not movable within its adipose capsule, but simply floats behind the peritoneum, firm stitching of the capsule to the parietes may be sufficient, but when the adipose capsule has become separated and forms a sac in which the kidney moves freely, something more requires to be done. In my first case I found that, on opening the adipose capsule, the kidney was easily pushed backwards and forwards within it. I then found it not only necessary to stitch the edges of the adipose capsule to the wound in the abdominal walls, but also, in order to secure the kidney, to pass two sutures through the cortex and fasten them externally by means of buttons. As far as I can ascertain, this was the first occasion on which, in performing nephrorrhaphy, sutures were passed through the cortex of the kidney. At that time, the surgeon dreaded wounding the kidney for the fear of inducing uncontrollable hæmorrhage. The details of my first operation will be found in the *Glasgow Medical Journal* for August, 1883.

What should be done can only be determined when the kidney is exposed. The objects are (1) to reduce the size of the cavity in which the kidney moves; (2) to fix the kidney and the walls of the sac to the abdominal parietes; and (3) to form adhesions between the kidney and the capsules surrounding it. When the adipose capsule is very loose and the kidney moves freely within it, the whole of the fatty capsule should be removed before stitching the edges of the fibrous capsule to the wound in the parietes. By doing this, the chances of future mobility are lessened. The divided fibrous capsule should be stitched firmly to the deep edges of the wound in the loin. Gut sutures passed through the kidney become destroyed very rapidly. The living renal tissue seems to have an unusual power of absorption. The portions which pass through the skin, fascia, muscle and even granulation tissue may remain firm and strong, whereas the parts in contact with the renal tissue soften and quickly become absorbed. The sutures through the kidney fulfil the part of keeping it in position for a short time, only ten days at the most. To form adhesions between the kidney and the parietes, the deep surfaces of the wound must be kept apart, and the space between the kidney and the parietes well packed with gauze, which must be retained for ten or twelve days, until its presence has induced a certain amount of local irritation. The gauze at first creates an oily discharge—fat escapes from the

perirenal adipose tissue. This continues for about a week, followed by a pink-coloured discharge, which consists of fat bubbles, red blood corpuscles, and leucocytes. When the matter becomes abundant only about the ninth or tenth day, the gauze may be removed.

Between serous surfaces union readily occurs and leucocytosis is rapid, but between a movable kidney and its surroundings the process is slow and can only be obtained by considerable mechanical irritation. This fact has not been sufficiently recognised. Nature's method of fixing a movable kidney is by inducing a perinephritis. Our method should be the same—only, let us keep control. Nature uses septic processes; we must limit ourselves to mechanical. The former may cure after causing the patient much suffering and not a little danger to life, but it is our endeavour to cure without the dangers of septic infection. Without some kind of irritation, granulation tissue does not form. To effect a cure, granulation tissue is required. So long as this is recognised, the means adopted are of secondary importance.

According to some writers, nephrorrhaphy has not been so successful in its ultimate results as was at one time anticipated. This failure I believe to be largely due to the incompleteness of the operation, the surgeon being in many instances satisfied by stitching the capsule of the kidney to the abdominal wound, whereas, in order to form a complete and firm adhesion, it is necessary to divide the fibrous capsule, stitch its free margins to the wound in the parietes, and while the external lips of the wound in the abdominal wall are accurately brought into position, the deeper parts should be kept separate, either by a large drainage-tube or by a plug of gauze, in order that a considerable mass of granulation tissue may exist between the exposed surface of the kidney and deep part of the wound. By doing so, a strong and firm cicatrix is formed, which holds the kidney in position.

My own results have been very satisfactory, and are as follows:—

In 75 per cent the kidney remained firmly fixed, but in 10 per cent of these a second operation required to be performed. In 16 per cent the operation was partially successful; in 9 per cent no benefit was derived. In 1½ per cent the operation proved fatal.

The advantages of nephrorrhaphy over extirpation of the kidney are very obvious, so much, indeed, that perhaps it is scarcely necessary to state them. They are, however, as follows:—

1. In nephrorrhaphy the organ is not removed, so secreting tissue is not diminished in amount, as it is in excision, and there is therefore no danger of removing, as has been done, the only kidney the patient may be possessed of.

2. The mortality in excision, even in cases where the remaining kidney was healthy, is not very encouraging (30 per cent), whereas in nephrorrhaphy the mortality is only a little over 1 per cent.

3. Nephrorrhaphy may be performed when both kidneys are movable, or when one is diseased.

4. In stitching the kidney to the abdominal wall, the peritoneum is not opened, as it is in the anterior operation for excision, where the membrane is incised at least twice.

5. Extirpation is only permissible where nephrorrhaphy has failed and where the patient's life is still seriously threatened, when the movable kidney is diseased and the fixed kidney healthy.

We may now consider nephrorrhaphy as regards improvement in general health, in the mitigation of pain, its effects upon the digestive organs and nervous phenomenon, and its power of relieving hydronephrosis and hyperæmia of the organ.

Beyond the direct effects of the operation, the rest in bed, the careful nursing, the restricted diet, and the systematic general massage, all have a beneficial effect, and if the patient is careful to carry out instructions the benefits should be lasting and permanent. But not unfrequently in young active women, the discomforts having disappeared, the restraint appears to them to be too exacting. The patient when she begins to move about is apt to be over-confident, and she is tempted to exceed the bounds of discretion. Even although she is duly warned against over-indulgence in exercise or in food, I have frequently had the following experience. Let me state as briefly as possible a case typical of this class:—

The patient, aged 32, the mother of five children, the eldest aged 8 years, complained of symptoms of movable kidney of five years' standing. Prior to the onset of symptoms the patient was well nourished, but when first seen by me she was ill nourished, suffered from constipation, vague abdominal pains, frequent attacks of flatulence, sometimes accompanied by vomiting of undigested food, and had renal colic at irregular intervals of from two to eight weeks. There were characteristic physical signs of movable kidney and of dilatation of the stomach. Nephrorrhaphy was performed

on 3rd January, 1900, and the patient was well on the 18th February. She continued to carry out instructions as to diet, restricted exercise, and so forth for four months, during which time she enjoyed good health, gained weight to the extent of 12½ lb., and she was able to take food well. At the end of June she asked leave to play tennis in a "mild way" or to take "short cycle rides," but permission was refused. Her petitions were repeated several times and met with the same reply, and after a fourth refusal to permit active exercise I heard nothing from her for eighteen months. She then returned and told me that her stomach had become very troublesome, her indigestion as bad as ever, and she was candid enough to say that she considered that the operation had been a failure. On inquiry I found that not only had she been playing tennis actively and cycling considerable distances, but she had also been over-feeding, and on one occasion after a long cycle run she admitted having eaten after a good meal fully 1 lb. of honey. Notwithstanding her complaints as to pain and indigestion she looked remarkably well, and weighed 18 lb. more than she did immediately prior to the operation. Her appetite, she said, was often inordinate. A few days' complete rest, return to restricted diet, and moderate exercise, and her complaints disappeared. This is a type of case of which I have seen many.

There are other cases in which the good effects of the operation may not be fully manifested for many weeks or even for months. How can we expect immediately beneficial results to follow nephrorrhaphy in cases where there has been long standing gastro-intestinal irritation? Not only have the functions of the digestive organs been impaired for many years, but the general health has also become seriously deteriorated. Time is required for restoration. Because the benefits are not immediate some sceptics refuse to credit nephrorrhaphy with the beneficial results we claim for it, and have endeavoured to convince us that the good which follows is simply the effect of the rest and nursing immediately preceding and following the operation. As far as my experience goes in the classes 3, 4, and 5, while rest gives relief for a time, the result is never permanent, whereas where an operation has been performed followed by rest excellent results are obtained.

The improvement in the functions of the digestive organs depends generally upon two circumstances—the duration of the disease and the care with which the patient carries out after-treatment. When of old standing, with pronounced

symptoms, the recovery is slow: but in looking over the large number of cases which I have operated upon in which gastro-intestinal symptoms have been noted as pronounced (fully 75 per cent), I find that almost all of them have improved in this respect, and in close upon two-thirds the digestive troubles—pain, flatulence, sickness, and constipation—are noted as having disappeared. When the neurotic phenomena are due to pressure of the displaced kidney upon one or other of the abdominal organs, or to traction upon the renal nerves, fixation is followed by disappearance of the symptoms. In about 70 per cent of my cases distinct benefit has been derived from the operation: in 12 per cent improvement has been noted; while 18 per cent are recorded as having received no benefit in this particular respect.

The cases in which the benefits of the operation are most marked are those belonging to the fourth class, namely, those in which the pain is distinctly renal and is associated with albuminuria, tube-casts, hæmaturia, or transitory hydronephrosis—that is to say, in cases where the pain is simply due to mechanical obstruction of the circulation, or to the escape of urine from the kidney. It is very important, before answering the patient's inquiry as to the benefits likely to accrue from the operation, for the surgeon to satisfy himself as far as possible as to the precise cause of the pain, and it should also be borne in mind that, while the pain is distinctly renal in movable kidney, it must not necessarily be due exclusively to the displacement. I have operated upon cases of movable kidney containing stone, a tuberculous focus, or tumour. I think it may, however, be safely asserted that when in a case of movable kidney of this class the pain does not at once disappear after the organ has been fixed in position, that the diagnosis has not been complete, and that some lesion of the kidney or of a neighbouring organ has been overlooked. The pain may be due to disease in the opposite kidney (reno-reflex).

In movable kidney complicated by hydronephrosis or by passive hyperæmia, the consequence of torsion of the renal pedicle, the operation has in all my cases been successful. In the former the obstruction is at once removed, the pelvis ceases to swell, and slowly the ureter is restored to its normal lumen. In the latter, reduction in size is more gradual, but in the end quite remarkable. I have seen a kidney which at the operation was found to be fully two and a half times its normal size contract to just a little over its proper proportions within ten days. In prolonged and severe cases of obstruction

to the venous return the recovery is slow—that is to say, in cases in which, prior to the operation, blood-casts, blood, and albumen have been present in the urine. After the kidney has been fixed the abnormal constituents disappear. Within twenty-four hours no blood-casts may be found; within two days the blood may disappear, but usually the presence of a small quantity of albumen persists for a time. In respect to the disappearance of albumen after nephrorrhaphy, the question of the co-existence of Bright's disease must be remembered. In 6 per cent of my cases other symptoms of Bright's disease were observed, and in nearly all of them the mobility of the kidney was of old standing.

(*To be continued.*)

## PERITYPHLITIS IN RELATION TO CARCINOMA AND FOREIGN BODIES.

By HENRY RUTHERFURD, M.B., C.M., F.F.P.S.G.,

Assistant Surgeon, Glasgow Royal Infirmary; Extra Surgeon, Royal Hospital for Sick Children.

*CASE I.—Two operations for supposed appendicitis (appendicectomy) followed by (1) excision of the colon, (2) extensive colectomy—Delayed and complicated passage of Murphy's button—Recovery.*

Arch. H., æt. 38, admitted to Ward 25 of the Glasgow Royal Infirmary on 24th May, 1904, under the care of Mr. H. E. Clark, with the following history:—

About a fortnight before, he felt a slight pain in the lower part of the abdomen; this got gradually worse, and reached its height in a week, settling down in the right iliac region. Four days ago he shivered, and has had shivers every night since. He has had no vomiting; the bowels have been quite regular; he had a motion on the morning of admission.

Examination showed a fulness in the right iliac fossa, tense, and dull to percussion, with great tenderness. Temperature on admission, 98·8°; pulse, 76; respirations, 24. At 8 p.m. temperature was 101·4°.

9·30 p.m.: Operation by Mr. Clark (chloroform).—Incision through skin and muscles outside rectus down to peritoneum;

<sup>1</sup> Read at a meeting of the Glasgow Pathological and Clinical Society held on 12th December, 1904.

this was found thickened. On opening into the peritoneal cavity about 6 oz. of putrid pus escaped. Cavity wiped out and packed. No search was made for the appendix.

Under packing the cavity contracted, and patient was dismissed in a month (28th June, 1904) with a linear scar.

*9th August, 1904.*—Dr. Rutherford being on temporary duty, the patient was readmitted complaining of pain and swelling at the seat of the old scar, which has been present for the last nine days; he kept on at his work till yesterday. On the night of admission he had a rigor; temperature rose to 103°. Next morning the abscess was found to have burst through the scar.

On 11th August (under chloroform) the old scar was opened up, and a search made for the appendix. A structure which seemed to correspond to it was found on the outer side and behind the colon, where it was embedded in dense fat, and difficult to recognise; this was ligatured and removed. The structure was afterwards found to consist of the distal two-thirds of the appendix.

*1st September.*—Dressings at intervals of five to six days at first showed what looked like mucus. Now the wound has contracted well, and shows nothing but a scanty pus from granulations.

*4th October.*—The wound had almost closed, but there was noticed a hardness like a Tangerine orange, bulging inwards under the abdominal wall above the upper end of the wound. Temperature, however, was normal, and there was nothing in the way of symptoms till on the evening of 2nd October the temperature rose to 101·6°, and it was found that a discharge of pus had taken place into the old sinus. This morning, under chloroform, the wound was enlarged, and masses of indurated fibrous tissue removed from the walls of the cavity. No part of the appendix was recognised. The velvety granulation masses breaking down at parts, with great fibrous tissue-formation, were suggestive of malignant disease.

Portions of these were removed, and found to be columnar-celled epithelioma.

*24th October.*—Abdomen opened below the umbilicus by an incision about 3 inches long. Ileum found entering a hard and much nodulated tumour. It was crushed with Mickulicz's enterotribe, and cut across about 2 inches from the mass representing lower end of ascending colon; distal end invaginated, proximal connected to sigmoid flexure by Murphy's button. Reinforcing sutures applied all round, the seat of operation wiped clean and returned to the abdomen. Clamp was used



to the ileum, but not to the sigmoid; abdominal wall sutured in three layers.

*16th November.*—The result of the operation was highly satisfactory. The dermatitis about the faecal fistula has been got rid of; there is now only a slight discharge of mucus, sometimes tinged with blood or with pus from the wound in the iliac fossa. There is now no longer any pouting of granulations, but hard rounded masses, the size of small grapes, are felt on introducing a finger. The median abdominal wound has healed *per primam*. The button has escaped, it is believed. Bowels move easily, and some care has to be taken to keep the stools of a firm consistence, but there has been no trouble with diarrhœa.

The tumour mass, which is like a small cocoanut, lobulated on the inner aspect, seems to be rather well defined and mobile in the iliac fossa in spite of being anchored to the anterior abdominal wall at and about the old wound.

*16th November.*—To-day the patient was again put under chloroform with a view to removal of the tumour, if this should be found practicable. An incision was made round the margin of the wound, through the adherent layers of the abdominal wall, till the peritoneal cavity was opened on the inner side and the iliac fascia was exposed on the outer. The iliac fascia and muscles seemed to be quite free from involvement by the tumour. At the upper end the definition of the tumour was more difficult, muscles not having here been, to begin with, properly cut through. Following the growth upwards posteriorly, it was found impossible to clear it in the course of the ascending colon, and on further extending the abdominal wound upwards this was found to be due to a firm adhesion between the upper inner convexity of the tumour and the pendulous transverse colon.

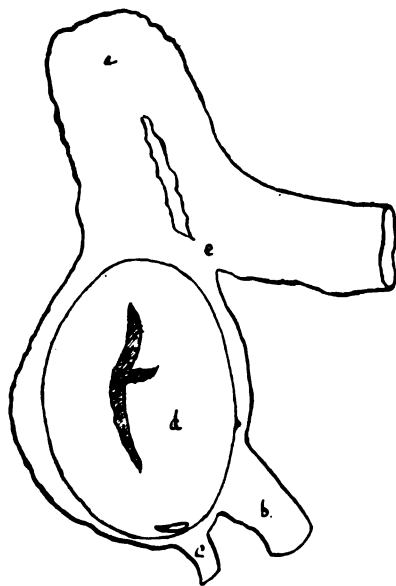
The transverse colon was crushed on the distal side of the adhesion, divided and dealt with as in the case of the distal stump of the ileum at the previous operation. Several glands, the size of hazel nuts, were found and removed with the tumour from behind the peritoneum, just at or above the lower end of the mesentery.

It was found impossible to close entirely the abdominal wound, so much of the wall having been cut away. The lower end was sutured, and a bulky iodoform gauze pack introduced into the iliac fossa and over lower end of kidney.

During the next few days patient was in a very doubtful condition, with a feeble pulse of 120 to 160, and considerable pain in the belly, which made him restless. As he was

inclined to be sick, he had saline enemata (10 oz.) with brandy (1 oz.). By the 21st his pulse had come down, and after this he steadily improved.

There was, however, a good deal of pain in the belly in the lower left quadrant, and this was complicated by diarrhoea, requiring the use of bismuth, and an escape of fæcal matter by the wound, which became established about three weeks after the operation. These symptoms were finally relieved after 16th December, when patient passed the Murphy's button which it was thought had escaped.



(a) Hepatic flexure ; (b) stump of ileum ; (c) stump of appendix ; (d) cut surface of tumour ; (e) cancerous adhesion to transverse colon.

*24th January, 1905.*—Since the passage of the button there has been no trouble in regulating the bowels; no diarrhoea. The wound has contracted to a narrow sinus. The patient has put on flesh, and has been getting out of bed (since 8th January) for the last fortnight. He takes all sorts of food.

*12th February.*—The patient continues to do well. But though the sinus in right iliac fossa is almost closed, there has lately been a scanty discharge into it of what seems to be intestinal fluid. This amounts to so little that patient has his

dressings changed every third or fourth day. It is possible that a coil of small intestine has become infected with the carcinoma, but there is no tumour, and it does not seem desirable to submit the patient to further operative treatment.

He goes to the home at Bearsden on 14th February.

*CASE II.—Perityphlitic abscess containing a fish-bone—Removal of inflamed appendix and affected part of omentum—Suppuration followed by abscess of lung and empyema (left)—Apparent recovery—Death from pyæmic encephalitis.*

Matthew D., æt. 37, was admitted to Ward 25 of the Glasgow Royal Infirmary on 24th August, 1904. Has been ill since 20th August (Saturday). Being on night work, after having his breakfast about 2.30 A.M., began to have sharp pains in the right iliac region. Did not leave off work till the usual time. Was seen for the first time by his doctor on the evening of the following day (Sunday, 21st), who found temperature and pulse normal, bowels having moved after castor-oil. There had been vomiting on Saturday and Sunday morning. He had oil again on Tuesday (23rd), and the bowels responded well. Pain seems to have been very persistent in the right lower half of the abdomen.

*25th August.*—Seen at 9.30 A.M. by Dr. Rutherford. The pulse, which was 78 on admission, is now 90. Temperature, 100° to 101°. Patient has been vomiting brown but inoffensive intestinal contents. He is rather cold in the extremities, and of an earthy colour. The whole right half of the abdomen is hard and more or less tender. It seems to bulge somewhat irregularly. Bowels moved by enema last night.

It was decided to explore the region of the appendix at once under chloroform. An incision was made parallel to Poupart in its outer half. The muscles were split in the direction of their fibres. On opening the peritoneum a gush of thin fluid took place, and a mass of hard, much congested omentum was found adherent to the small intestine, and by recent adhesions to the anterior abdominal wall. In turning up this mass of omentum to separate it from the bowel in search for the appendix, it was torn into and an abscess found, in which the appendix could not be seen. In the abscess was seen a brittle-like object, about three-quarters of an inch long (this seems to be a fish-bone). The omental mass was very firmly adherent to one loop of small intestine, so that the latter bled freely, and care had to be taken to see that it was not ruptured. More pus escaped from between the coils, and finally the appendix appeared, much tumefied, and coated with

fibrin in its distal half. It was tied off and cut away in a sound part, close to the cæcum. The coils and adjoining parietal peritoneum were carefully wiped, and the abdominal wall closed in three layers, no drain at all being used. By 8 P.M. patient had been able to pass urine, and was remarkably comfortable.

*26th August.*—Has passed flatus. No vomiting since coming off the table.

*28th August.*—Pulse has steadily come down, and is now between 70 and 80. Temperature during the evening rose to 99°-100°. There is no abdominal distension and no pain, but there has been no movement of the bowels, and mouth remains dry.

*31st August.*—Temperature and pulse being as at last note, the dressing was removed to-day, and a large abscess found mainly in the abdominal wall. This was opened, and the cavity packed.

*4th September.*—The large and sloughing cavity has been dressed every second, third, and fourth day, and patient has been doing well till to-day, when temperature rose from 101° to 104°, and he complains of pain across chest. Nothing found on examination of the chest.

*28th September.*—Temperature this morning is 103°, and the left side of the chest is dull throughout. With eucaine, a portion of the ninth rib was excised posteriorly, and exit given to a large quantity of turbid, but by no means grossly purulent fluid. Bacteriological examination found the diplococcus lanceolatus.

*23rd October.*—Temperature came down at once. The abdominal wound became clean, and has contracted well. Discharge from the pleural wound is frankly purulent. At first the subcutaneous tissues and skin sloughed rather badly.

*13th November.*—Abundant but thin discharge from pleural wound. Patient improving in general condition. Has been up daily since last note.

*29th November.*—For the last two days patient has been coughing more, and spitting up a thick purulent and darkly bloody matter.

*30th November.*—Examined by Dr. T. K. Monro, who is unable to localise any destructive process in the lung, but finds all over the left chest enfeeblement of the respiratory murmur, which accords with the presumably collapsed state of the lung.

*28th December.*—Wound in back of chest diminished to a small opening just admitting a probe. From this there is

a discharge, small in amount, but always containing some blood. Probe passes upwards and forwards about 6 inches, but does not reach any cavity in which it can be turned. Percussion fairly good from midscapula upwards. Respiratory murmur can be heard well—in fact, it is exaggerated.

Circumference of affected side at level of wound,  $16\frac{1}{2}$  inches; of sound side, 17 inches.

A fine drainage-tube was passed into the sinus.

*30th December.*—Tube extruded.

*1st January, 1905.*—Wound quite closed.

*6th January.*—Sent to convalescent home.

*13th January.*—Sent back from the home to-day with symptoms referable to the head. Three days ago complained of severe headache, which was still present, though less severe, the following day. Last night, temperature was  $103.8^{\circ}$ , but his headache was better. This morning, was found by the nurse quite unconscious. Temperature, at 8 A.M.,  $100^{\circ}$ ; at 11 A.M.,  $103.8^{\circ}$ . Wound in the back reopened on the first day of headache, and a considerable amount of discharge took place.

On readmission, patient was in a torpid condition, making no complaint, and making scarcely any response to what was said to him. Only by persistent shaking and shouting could his attention be engaged. He tends to keep his eyes shut, and resists when an attempt is made to open them. Pupils dilated, but fairly mobile. No papillitis. Moves both hands and both legs, the right more freely than the left. No facial or other localised paralysis. No ear disease and no localised tenderness of the head. Says he has no pain in the head. Temperature varied between  $99^{\circ}$  and  $101^{\circ}$ ; pulse, about 85, rising at the end to 110; and respirations, 30, rising in the last twenty-four hours to 40 and 60. The stupor went on increasing till, on 15th January, he was deeply unconscious, breathing stertorously.

*Post-mortem by Dr. Workman.*—There was found multiple encephalitis. Pus free at the base, all across the middle fossa and central part of posterior, in lateral ventricles, and in the fourth. There were also found at least two abscesses in the brain substance.

In the pus from the brain Dr. Campbell, the assistant bacteriologist, finds a pure culture of *diplococcus lanceolatus*, which he also found in pure culture in the pleural effusion.

The first of these cases presents various features of interest

apart from the difficulty in diagnosis and the resulting error, but this is, perhaps, the one of most consideration. Pain and swelling in the right iliac fossa, with rigors, elevation of temperature, and tenderness, led to the suspicion of appendicitis with abscess. On operation, this seemed to be confirmed by the fact that pus was found. Nearly three months later, the patient having meantime gone back to work, a recurrence of the symptoms, with fresh abscess-formation, prompted a search for the appendix, which was with some difficulty removed. Only when the second, more extensive, wound failed to heal was my attention called to the tumour formation adjoining and the appearance of the walls of the sinus. When the diagnosis of carcinoma of the colon had been made, I was at first inclined to suppose that the discharge of intestinal contents was by the route of the amputated appendix, and that through this the obstructed bowel was relieving itself. I had in mind a case of multiple carcinoma of the bowel where, after recovery from excision of the rectum, obstruction occurred at the hepatic flexure, and led more or less directly to perforation at a third point of tumour-formation in the appendix. Distension of the appendix from obstruction in the colon was also noted by me in a case where I operated successfully for carcinoma of the ilio-cæcal region, and of which there is a plate in the *Glasgow Medical Journal* for February, 1898.

This, however, turned out not to have been the case here. While the appendix, on examination, showed some round-cell infiltration, it was neither distended nor the seat of carcinoma. It would appear that the fistula which formed after the second operation led directly from the cancerous ascending colon, and was probably at the site of the ulceration in cancerous tissue which led to the original abscess.

Mr. Lockwood in his book<sup>1</sup> describes a case where a similar difficulty in diagnosis existed. The question of malignant disease was raised. But he says the tumour "felt like one of those masses which are so commonly caused by an ordinary attack of appendicitis. . . . I am at a loss to understand how an earlier diagnosis could have been made. It is, however, to be noted that after the first attack of appendicitis she continued ill, and this appendicular swelling underwent no alteration." In the case before us, the man had gone back to work for about six weeks.

The same author, after quoting Kelynack<sup>2</sup> to the effect

<sup>1</sup> *Appendicitis, Its Pathology and Surgery*, 1901.

<sup>2</sup> Kelynack, *The Pathology of Vermiform Appendicitis*, 1893.

that "primary cancer of the appendix may be said never to occur," refers to Kelly and Deaver as giving four cases, all of which were operated upon on the supposition that they were suffering from appendicitis.

He also quotes Rolleston,<sup>1</sup> who describes a case of primary carcinoma of the vermiform appendix. "The patient had had four attacks of appendicitis, and the exact nature of the disease was not known until it was disclosed by the histological examination."

Lockwood also cautions against mistaking inflammatory disease for carcinoma (from naked-eye examination).

Battle and Corner (London, 1904), from a large survey of statistics of cancer of the bowel, which gives an incidence to the appendix of 1 in 251, are of opinion that this puts its occurrence too low, owing to the want of systematic microscopical examination of the appendix. "Again, the malignant growth is always accompanied by inflammatory changes which may mask the true origin of the disease, both pathologically and clinically. The cases always come under notice as appendicitis, or else the condition is discovered by chance or as a result of a careful *post-mortem* examination."

Exclusion of the colon showed itself here a most satisfactory procedure, both as simplifying the subsequent colectomy and as improving the local and general condition of the patient. His cæcal fistula, though carcinomatous, became a trivial affair requiring only a collodion dressing, and if the colectomy had been found impracticable, the diversion of the intestinal contents to the sigmoid and rectum would still have been a material benefit. Further, I am impressed by the freedom and security it gave in dealing with a carcinomatous colon, the extent of which, with its mesocolon and glands, was quite unknown. Such a procedure, it seems to me, offers unmistakable advantages over any form of colectomy with end to end anastomosis. I have in my mind a recent case where, after a right colostomy, I did resection of the hepatic flexure for tumour, and where the proximal end, hypertrophied and dilated, was out of all proportion to the contracted distal end, with its walls of normal thickness; also one of carcinoma of the descending colon where, after pulling out the colon-formation of a spur and amputation of the tumour, the re-establishment of the continuity by means of a crusher (Mickulicz's kentrotube) was followed in six months by infection of the scar and secondary tumour formation. This procedure, known as Paul's and as Mickulicz's, which is a

<sup>1</sup> Rolleston, *Lancet*, 19th July, 1900.

development of Dupuytren's for the accidental spur formation after fæcal fistula from gangrenous hernia, has the obvious limitation that it does not provide for dealing with the mesocolon and glands. When the case comes to operation with colic obstruction, distended intestines, and a blown-out abdomen, there are obvious advantages in the simple colostomy as against exclusion by anastomosis, but the choice of operation, it seems to me, should be based rather on the idea of complete extirpation of the tumour than on the restoration of the colon in its continuity; also, it is not to be denied that a patient with a bowel short circuited to this extent is better off than one with a fæcal fistula.

As regards the use of Murphy's button, its prolonged retention in the present case, and the perforation which seems reasonably attributable to it, cannot be overlooked. The use of Senn's plates and many subsequent inventions have promoted the surgery of the intestinal tract, but I do not think that in such a case as the one under consideration their use is so simple or so secure as appears on theoretical or even experimental grounds.

The other feature of this case which seems to me of interest was the extensive removal of the abdominal wall. This was such as to make it impossible after the colectomy to close the wound and to require a voluminous packing with iodoform gauze. Without ignoring the suppuration which ensued, the wide opening must be regarded as having been a source of safety to the patient, whose Murphy button anastomosis leaked, and the present condition of the well-retracted scar will encourage me to such a sacrifice of the abdominal wall in similar cases of cancerous involvement.

In the second case (where the abscess contained a fish-bone), we cannot say that we were dealing with appendicitis, the appendix, though showing some round-cell infiltration, being free from any appearance of perforation and lying at some distance from the foreign body, though both were surrounded by pus. Further, it can be classified as perityphlitis only in the most general anatomical sense. The close adhesion of the omentum to a part of the the ileum, and the thinning of the bowel wall there, suggested that the fish-bone had perforated the small intestine—that is to say, had not passed into the cæcum at all.

It is, I think, recognised that many objects recorded in the past as foreign bodies in the appendix were really concretions. A further point is that such concretions have not, as a rule at least, been formed in the bowel and subsequently found their



way into the appendix, but have formed in that viscus where they were found at operation or *post-mortem*. All this, however, does not mean that foreign bodies do not find their way into the appendix and cause trouble there. Deaver<sup>1</sup> describes and figures a case in which at operation he found a pin sticking out of the appendix. With the exception of this case, he does not "recollect having encountered a single foreign body in any of the appendices removed." Mitchell,<sup>2</sup> quoted by Deaver, "has collected from the literature a total of 36 cases in which pins have been encountered in the appendix." . . . "All types of appendicitis may result. Some give rise to chronic appendicitis, . . . with recurrent attacks, or with long-continued pains, or only a feeling of uneasiness in the right iliac region, which may last for months or years, and perhaps finally end in an abscess. . . . Most often, however, there is rapid perforation and abscess formation following the first appearance of the symptoms." Mitchell further mentions the following as among the foreign bodies that have been found in the appendix:—"Shot (122 shot in one case), pins, worms, gall-stones, a tooth, pieces of bone, grape seed, date seed, cherry-stone, apple pips, oat husk, corn husk, bristle of a toothbrush, wisp of a broom, fin of a fish." . . . "In 250 cases of appendicitis in Johns Hopkins Hospital there occurred but one foreign body—a segment of a tapeworm." The last statement is of value, as contrasting with the percentage of foreign bodies (apart from enteroliths) given even by such authorities as Fitz, that pioneer in the subject, who speaks of 12 per cent: Renver, 3·5 per cent; and Matterstock, 12 per cent (*cf.* Deaver, *loc. cit.*).

The subsequent course of the case must be taken as a reflection on the attempt to close the abdominal wound at the first operation without drainage. Perforation in the region of the cæcum contrasts markedly with perforation of the stomach or duodenum, and also with any extravasation from the ordinary abscesses met with in gynecological practice. The happy results which may be obtained by immediate closure in the latter class of case have been set forth in impressive manner by Kelly.<sup>3</sup>

Permission was with difficulty obtained to examine the head only. But there having been no signs during life of sub-diaphragmatic abscess, the pneumonic abscess and empyema are to be regarded, in my opinion, as pyæmic, with the later

<sup>1</sup> *A Treatise on Appendicitis*, London, 1900.

<sup>2</sup> *Johns Hopkins Hospital Bulletin*, 1899.

<sup>3</sup> *Operative Gynecology*, 1898, vol. ii.





DR. ROBERT S. THOMSON.

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from the "Glasgow University Magazine."*

result of widespread encephalitis of the same nature and bacteriological origin.

For permission to continue in charge of these cases, I am indebted to Mr. H. E. Clark, as well as for his kind assistance at various points in their course.

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## Obituary.

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ROBERT S. THOMSON, M.D., D.Sc., F.F.P.S.G., F.R.S. EDIN.

DR. THOMSON'S death, occurring as it did after an illness which had continued over a period of nearly six months, and which was generally known to be very grave in character, was not altogether unexpected amongst the large circle of professional and lay friends who so highly esteemed him.

His removal, however, leaves a gap in the ranks of the profession in Glasgow which can neither be easily nor at once completely filled.

Dr. Thomson's earlier years were spent in St. Petersburg, and to his residence and school training in that city he owed his familiarity with the Russian and German languages. Indeed, during the earlier years of his professional life in Glasgow he contributed to the pages of this *Journal* translations of numerous articles appearing in the Russian medical papers.

After leaving St. Petersburg his general education was completed at the Glasgow Academy, from which he passed to the study of medicine in the University of Glasgow. In 1880 he obtained the degree of B.Sc., and two years later the degrees of M.B. and C.M. with "high commendation."

After completing a term of service on the staff of the Western Infirmary and also at the City Fever Hospital, Belvidere, Dr. Thomson engaged for a time in post-graduate study in Vienna. On his return to Glasgow he became assistant in the clinique attached to Dr. James Finlayson's wards, and this association with Dr. Finlayson was continued throughout his entire career. Probably, indeed to the larger number of medical practitioners, the name of R. S. Thomson will at once be linked in memory with Dr. Finlayson's wards

in the Infirmary. The tutorial and other classes conducted by Dr. Thomson in these wards will recall to the minds of many the earnestness, lucidity, and systematic arrangement which characterised his teaching. For over twenty-one years Dr. Thomson was engaged in medical practice in Glasgow, and during the latter portion of this period he was rapidly acquiring a consulting practice.

In addition, Dr. Thomson acted for nearly sixteen years as lecturer to the nurses at the Western Infirmary, devoting himself with characteristic energy and conscientiousness to making their medical training as perfect as possible.

Seventeen years ago he was appointed by the Corporation of Glasgow visiting physician to the City Small-pox Hospital, Belvidere, a position which he filled till the beginning of his last illness. The exacting and responsible duties of this post made great demands on his time and strength. Daily, during the progress of an epidemic of this disease, he used to go to the Small-pox Hospital after a busy day spent in teaching and in attention to the claims of practice, completing his evening visit frequently at an hour which allowed too brief a respite from work.

Anything which Dr. Thomson undertook to do was performed with such scrupulous care and thoroughness that he frequently over-taxed his strength, and to many who were familiar with the manner in which he literally spent himself in the performance of his duty, it was at that time a matter of wonder that he was able to accomplish so much without breaking down. Indeed, the manner in which he pursued his work frequently gave his friends cause for anxiety on his behalf.

Although his loss is acutely felt by a large number of patients, to many of whom he was a trusted friend and adviser as well as a valued physician, the name of R. S. Thomson will always be associated with his widely recognised ability and popularity as a teacher of medicine.

His connection with Anderson's College Medical School extended over many years, during the earlier of which he acted as assistant to Professor Samson Gemmell, and in this position he laid the foundation of his reputation as an attractive lecturer. Following Dr. Gemmell's appointment, six years ago, to the Chair of Clinical Medicine in the University, Dr. Thomson succeeded him as Professor of Systematic Medicine in Anderson's College. His reputation as a teacher, already secure by that time, ensured an immediate success, his classes becoming of very large size. In all he did

for students, he was actuated by a warm interest in their welfare, and this, readily appreciated by them, won for him their friendship and regard.

Many former students will also recall his kindness with gratitude, and whenever he was able to render them any service it always afforded him genuine pleasure to do so. Frequently these services were of such a nature as to make considerable demands on his time and thought, and these were always placed ungrudgingly at their disposal.

In the position of Dean of the Faculty at Anderson's College, to which he was elected shortly after becoming a member of the teaching staff, he devoted himself with characteristic enthusiasm to the task of advancing the efficiency of the College as an important extra-mural school.

In doing so, he consistently recognised the fact that this was to be sought in uniting more closely the bonds between the University and Anderson's College, and he availed himself of every means which was calculated to make the College an efficient and useful aid in the medical training given in Glasgow.

To his exertions, moreover, was mainly due the inauguration of a scheme of financial endowment for the various subjects taught in the College, an aim which every well-wisher of the College must hope, by generous co-operation, to realise.

Dr. Thomson's contributions to medical literature are both numerous and valuable. He brought to work of this kind a very high ideal of performance. His facts were always most carefully observed, and when these were based on experimental work this was in every case repeatedly performed in such a manner as to exclude any fallacy of observation. In the pursuit of any investigation, Dr. Thomson never permitted himself to record anything which was not the subject of painstaking and often laborious work, and one may in consequence accept his statements with the knowledge that they are thoroughly well founded.

These qualities are prominently illustrated in two of his papers, a list of which is appended. These are of such a nature as to demand patient investigation over long periods. The first, viz., "Scarlatinal Albuminuria and the Pre-Albuminuric Stage, as Studied by Frequent Testing," was published in 1886; the other, entitled "Pertussal Glycosuria, with Observations on the Reduction of Fehling's Solution by the Urine in Childhood," formed the subject of his thesis for the degree of M.D., which was awarded honours and the Bellahouston Gold Medal.

His collected contributions comprise the following:—

1. "Scarlatinal albuminuria and the pre-albuminuric stage, as studied by frequent testing," *Transactions of the Royal Medical and Chirurgical Society*, London, 1886.
2. "Case of aphasia, with repeated localised convulsions of the tongue and right cheek," *Glasgow Medical Journal*, March, 1888.
3. "Large sarcomatous tumour of the chest in a child," *Transactions of the Glasgow Pathological and Clinical Society*, November, 1888.
4. "Diabetes mellitus in a young child," *Glasgow Medical Journal*.
5. "Chloral hydrate, ergot, and nitric acid in the treatment of whooping-cough," *Archives of Pediatrics*, 1890.
6. "Aneurism of the innominate artery, treated by Macewen's method," *Transactions of the Glasgow Pathological and Clinical Society*, November, 1891.
7. "Early pressure symptoms in aneurism of the aorta," *Transactions of the Glasgow Pathological and Clinical Society*, February, 1892.
8. "Analytical report on aleuronat and its derivatives." (In conjunction with Dr. A. R. Ferguson.)
9. "Vaccinal immunity in relation to the serum treatment of small-pox, with a record of cases," *Scottish Medical and Surgical Journal*, August, 1897.
10. "Pertussal glycosuria, with observations on the reduction of Fehling's solution by the urine in childhood," (Thesis for the degree of M.D., 1897), *Glasgow Hospital Reports*, 1900.
11. "Report on the cases admitted to the City of Glasgow Small-pox Hospital, Belvidere, during the epidemic outbreak in the years 1892-1895," *Glasgow Hospital Reports*, 1898.
12. *Urinary Tests and Sediments*, published by Alex. Macdougall, 1895.
13. "Certain points in the diagnosis of varicella," *International Clinics*, 1898.
14. "Observations on an infectious disease in Lascars having close relations with variola and varicella," *Lancet*, 22nd October, 1898; *Glasgow Medical Journal*, December, 1898.
15. "A small-pox hospital's experience of the protective influence of vaccination," *Transactions of the Philosophical Society of Glasgow*, 1899.
16. "Intestinal sand," *Transactions of the Glasgow Pathological and Clinical Society*, vols. vii and viii.
17. "An analysis of sandy matter ('sable intestinal') from the human intestine, with special reference to a contained pigment of unusual character" (in conjunction with Dr. A. R. Ferguson), *Journal of Pathology and Bacteriology*, February, 1900.
18. (a) "Two cases of tubercular tumour of the brain"; (b) "A gliosarcoma of the pontine region, with peculiar relationships," *Transactions of the Glasgow Pathological and Clinical Society*, vol. ix.
19. "Salol in the treatment of small-pox," *Glasgow Medical Journal*, June, 1902.
20. "A summary of statistics relating to vaccination and small-pox, as observed in the cases admitted to the City of Glasgow Small-pox Hospital, Belvidere, between 10th April, 1900, and 30th June, 1901," *Transactions of the Philosophical Society of Glasgow*, 1901-1902.
21. "Preliminary note on the parasites of small-pox and chicken-pox" (in conjunction with Dr. John Brownlee), *British Medical Journal*, January, 1903.
22. "Further observations on the treatment of small-pox by the serum of immunised heifers," *Lancet*, April, 1903.

## CURRENT TOPICS.

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**ANDERSON'S COLLEGE MEDICAL SCHOOL.**—The Governors have appointed Mr. R. Barclay Ness, M.A., M.B., F.F.P.S.G., Professor of Materia Medica and Therapeutics in the College, to be Professor of Practice of Medicine in succession to the late Professor R. S. Thomson.

**DR. ALEC R. FERGUSON**, Senior Assistant to the Professor of Pathology in the University of Glasgow, has been appointed Professor of Pathology and Bacteriology in the Egyptian Government School of Medicine at Cairo.

**MR. ALEX. ROBERTSON**, M.B., C.M., has recently been appointed Medical Officer to the Gilbert and Ellis Islands Protectorate. Dr. Robertson, who is a son of Dr. Alexander Robertson, graduated in 1896, and held resident appointments in the Royal Infirmary and in the Fever Hospital here; he also served as civil surgeon with the South African Field Force.

**MR. ROBERT LEIPER**, M.B., Ch.B., who graduated last year, has been appointed Lecturer on Helminthology at the London School of Tropical Medicine. As a student, Mr. Leiper acquired a reputation for his researches in this department of natural history.

**GLASGOW MEN AND THE ARMY MEDICAL SERVICE.**—We have been favoured by the Director-General of the Army Medical Service with the list of successful candidates at the recent competitive examination for commissions in the Royal Army Medical Corps. Out of 68 candidates, 25 were successful in gaining commissions, and it is gratifying to note that the list is headed by a Glasgow graduate, Mr. Charles P. Thomson, M.B., Ch.B.

Mr. Thomson graduated in 1900, and subsequently held appointments as resident medical officer in the Guest Hospital, Dudley, and as house physician in the Western Infirmary of Glasgow. He was afterwards an extra dispensary physician at the Victoria Infirmary, Glasgow. At the examination he received 669 marks, being 79 ahead of the next competitor.



Glasgow is also represented by Mr. George S. Wallace, M.B., Ch.B., D.P.H., who comes in at the eighth place. Mr. Wallace graduated in Glasgow in 1901. He subsequently studied at University College, London, and took the D.P.H. of the Royal College of Physicians and Surgeons in 1904. He held the post of clinical assistant at the S.E. Fever Hospital, and he became, later, house surgeon in the Western Infirmary of Glasgow. He served as a civil surgeon with the South African Field Force in 1901-1902, for which campaign he holds the medals.

Glasgow does not send many men into the Medical Services, but many of those who have gone forward have taken high places, both on entering and later on. We need hardly remind our readers of the large proportion of Directors-General of the Home Service bred in our own University, and of our prestige being well maintained also in the Indian Medical Service. Any future son of our *Alma Mater* entering the Service will find that he has to live up to traditions of a high order.

**THE CONTROL OF HOSPITAL EXPENDITURE WITH EFFICIENCY.**—We have just received a pamphlet with the above title. It is a reprint of a paper by Dr. D. J. Mackintosh, of the Western Infirmary, read before a meeting of the Hospitals Association on the 3rd of last month. The object of the paper was to bring before the Association a few suggestions, the outcome of personal experience, for the control of hospital expenditure.

At the outset, the author refers to the benefit which accrues to an administrative official from visiting other hospitals. By doing so, he sees how the various methods of administering such institutions work out, and thus he profits by the experience of others. The question of comparative expenditure is then gone into, and the necessity for information as to *details* of expenditure is shown. To fulfil this condition, it is imperative that the "whole work of superintending the various departments should be focussed in the hands of a single administrator." In this way overlapping, and the unnecessary expense consequent on it, may be avoided. That the "combination of detailed knowledge with effective superintendence" is practicable, he proceeds to show by referring to details of some of the main items of expenditure in the Western Infirmary. First of all, he goes into the item of provisions, and here he shows that, although the Infirmary is managed very cheaply, the patients are extremely well fed, and are supplied with everything that they require during their

residence. He makes this statement in view of the paragraph which appeared in the *Standard* recently, and in which it is implied that the patients in some of the Scottish hospitals are starved.

The next item which he takes up is that of dispensing, and he defends the practice in the Scottish hospitals of purchasing most of the important Galenicals. But it is in consideration of the question of surgical dressings that he makes a very strong point for the administrator being a member of the medical profession. Referring to extravagance in this item of expenditure, he says that "a layman in charge would be obliged either to interfere ignorantly or not to interfere at all. In the first place, he has not the practical knowledge, . . . and, in the second place, it is not probable that he would be listened to by the junior members of the staff with the same respect as a qualified member of their own profession."

He next gives details as to breakage of crockery-ware, &c., and describes the system of heating and lighting in the Infirmary; and he closes by referring to the ungrudging aid afforded to the institution, in the purchase of goods, by the advice of those members of the Board who are experts in the various departments of commerce.

We think this paper an important one. It is written by one who is thoroughly conversant with the subject, and who is able to guide others engaged in studying the problem of the economical administration of hospitals. Further, it will show the public something of the way in which the funds which they subscribe are being looked after: the way is undoubtedly that of economy with efficiency.

**ABUSE OF MEDICAL CHARITIES.**—Under the auspices of the Joint-Conference Committee of Queen Margaret College Settlement Association and the Charity Organisation Society, a meeting was held last month at which the subject of the abuse of medical charities was introduced by Professor Ralph Stockman. There was no reason, he thought, why municipal authorities should not recover a charge from well-to-do people of any class, from artisans upwards, who took advantage of their hospitals. Dealing with general hospitals, he pointed out that one had to distinguish between in-patients and out-patients. There could not be any great amount of abuse among the in-patients, but there was a consensus of opinion that any abuse which existed had crept in among the out-patients. A charge brought against hospitals was that they were pauperising, and that many people who went to them

could pay fees. On the whole, he thought the number was small of out-patients who could pay anything like a reasonable fee. Other charges were referred to, and Dr. Stockman questioned very greatly if they could be justified to the full extent that those who made them would have them believe. One cause of the great increase in hospital practice was the increasing intelligence on the part of the people. Regarding the prevention of abuse, there should be a check on the multiplication of hospitals and on rivalry in producing statistics showing a large number of cases treated.

**THE CARNEGIE TRUST.**—The fourth annual report of the Carnegie Trust was considered at the annual meeting of the trustees on 27th February, and approved. Under the head of grants for buildings and permanent equipment, it is reported that the two new buildings at Glasgow University for the department of physics and for the departments of physiology, materia medica, and forensic medicine are making satisfactory progress, and that half of the expense incurred up to date has been met out of the grant allocated to this purpose by the Trust. The claims for grants towards teaching endowments include a contribution towards the foundation of a chair of geology, the accumulated grants having been handed over on the appointment of its first occupant at the beginning of the current session, and the further grants needed to complete its endowment will be paid over as they fall due. In the scheme of grants to extra-mural schools, Anderson's College Medical School and the Glasgow and West of Scotland Technical College have been included. Applications for the fellowships, scholarships, and grants under the research scheme must be lodged with the secretary on or before 1st May, and from him the forms and regulations can be obtained.

**THE IMPERIAL CANCER RESEARCH COMMISSION.**—The work undertaken by the Cancer Research Commission will of necessity be slow to achieve results, but the recently published blue-book containing colonial reports thereanent makes interesting reading, and proves that throughout the Empire the research will have every assistance. The chief facts ascertained so far are that the native races are much less liable to cancer than Europeans, and that it is practically non-existent in Africa. Ceylon provides the most detailed returns, and it appears that in that island the disease is less prevalent than formerly, that it is more common in males than in females, and that the average age is over 40 years.

**HYPERMICROSCOPY.**—The microscope appears to be capable, after all, of still further development. Modern instruments give the power to see fractions of a micron, which is the millionth part of a metre. Micro-organisms have been distinguished down to the tenth of a micron, which is the estimated size of the bacillus of pleuro-pneumonia in cattle. This is the smallest microbe actually known, but pathologists believe in the existence of still smaller ones. So, too, in the investigation of the cell. Anatomists have postulated origins of the cell beyond the reach of any yet known microscopic power, such as the plastidules of Haeckel and the gemmules of De Vries. It is now asserted that a further advance into the regions of the infinitesimal has been made possible. Two German microscopists, Siedertopf and Zsigmondy, devised a method in 1903 which seems to be a development of the immersion process; and lately, according to an important article by M. Dastre, published in the *Revue de Deux Mondes* for 1st March, this process has been simplified and improved by two young Frenchmen, A. Cotton and H. Mouton. M. Dastre states that their results are to be published shortly.

**PHARMACY BILL, 1905.**—A Bill to provide for the further regulation of the sale of poisons and the compounding of medical prescriptions, and to amend the Pharmacy Acts of 1852 and 1868, has been introduced in the House of Commons. The second reading is down for 24th March, so that at the date of going to press it is impossible to do more than detail the objects of this Bill so far as they are of special interest to members of the medical profession. These objects are: to check the practice on the part of a duly qualified person of opening and carrying on divers shops for the sale of poisons, and to provide that every such shop shall be under the personal conduct and supervision of a qualified person; to provide for the maintenance of a register of shops in which poisons may be sold, and the chemists conducting such shops; to provide that no poison be sold in any shop which has not been so registered; to provide that the compounding of prescriptions shall be in the hands only of persons duly qualified to sell poisons; and to extend to corporate bodies certain of the provisions of the Pharmacy Acts from which they are at present exempt.

## MEETINGS OF SOCIETIES.

## GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1904-1905.

MEETING III.—12TH DECEMBER, 1904.

*The President, PROF. ROBERT MUIR, in the Chair.*

## I.—FRESH SPECIMEN.

BY DR. A. N. M'GREGOR.

*Case of twisting of the pedicle of an ovarian cyst which simulated rupture of an extra-uterine pregnancy.*

Mrs. G., æt. 26, was admitted to the Glasgow Royal Infirmary on 9th December, 1904, said to be suffering from a ruptured extra-uterine pregnancy.

*Previous history.*—The patient has had no illness since childhood. She has had three pregnancies with normal confinements. The prominent symptom of all her pregnancies was retching and vomiting, and this reappeared on 9th August, since when she has vomited daily. That date was the end of her last menstrual period, and she states that a few days later some red, jelly-like material was discharged from the vagina. Prior to the 9th of August, she was in good health, and had noticed no swelling of the abdomen. Since then, however, it had increased rapidly in size until the day before admission, when it had the appearance of a full-time pregnancy. During the last month she had been disinclined for work, and has not felt very well.

At 10 P.M., on 8th December, the patient took a sudden pain in the right iliac region. The pain was described as "sore" and "gnawing," and continued without intermission until her arrival at hospital the following afternoon.

*Condition on admission.*—"The patient is somewhat anæmic, and has an anxious expression. Her pulse is good, 70 per minute. The temperature is normal, and respirations shallow. There is pain and tenderness all over the abdomen, most marked in the right iliac region. The abdomen presents a curious appearance, in that the swelling is most prominent

above the umbilicus and at the flanks. Below the umbilicus, the abdomen looks flat by comparison. Palpation reveals the presence of a large fluctuant tumour, with the margins well defined in the flanks. Palpation of the lower part of the abdomen is painful, and only a sense of increased resistance can be made out. The whole abdomen is dull to percussion, and fluid is present in the peritoneal cavity."

The patient was operated on at 4.15 P.M., on 9th December, by an opening in the middle line below the umbilicus. A large cyst of the ovary was discovered, tapped, and withdrawn. 138 fluid oz. of fluid were removed by the cannula, and 32 oz. were found after removal. The pedicle was found twisted, to the extent of a complete turn. There was considerable effusion of blood into the broad ligament, and this was continued, retro-peritoneally, in a sausage-shaped mass for some distance up the right side of the posterior abdominal wall. The cyst was detached, and a quantity of blood-stained fluid, of gelatinous consistency, was removed from the peritoneal cavity. The size of the uterus corresponded to that of a four months' pregnancy. Patient stood the operation well, and was progressing favourably.

## II.—CASE OF EXTRAVASATION OF URINE AS RESULT OF AN IMPACTED URETHRAL CALCULUS.

By MR. A. E. MAYLARD.

*Report by Dr. Thomson.*—E. R., aged 4 years, was admitted to the Victoria Infirmary in August, 1904, suffering from extravasation of urine.

The history was that three days previously, on passing his urine, the stream suddenly stopped, and the child began to cry out greatly with pain about the penis. The pain lessened, and a few hours afterwards, again wanting to micturate, he was unable to do so, and suffered great pain. The friends, noticing that the child was all swollen about the genitals and perineum, brought him up to the hospital.

On admission, the entire penis, scrotum, perineum, and groins were greatly swollen and cedematous. Free incisions were made into the parts, and on attempting to expose the glans penis, a calculus was found impacted close to the meatus. It was oval in shape, measuring about 12 mm. by 8 mm., and was easily extracted. The child's condition rapidly improved, but it was soon discovered that a well-marked urinary fistula existed halfway up the penis on the under surface. As this

showed no sign of closing, a catheter was tied in; but as this proved of no avail, perineal section was performed, and a small plastic operation upon the fistulous opening into the urethra. This proved quite successful, and in the course of about a fortnight the urine came by the natural passage quite freely.

At the present time, three months from his operation, his urination is quite normal.

*Professor Muir* suggested that the calculus had at first been impacted, and had caused an ulcer at the spot where rupture subsequently occurred.

*Dr. Rutherford* asked whether the rupture was not really in the membranous urethra, the urine travelling forward in the tissue of the penis to where it appeared externally.

*Dr. Renton* expressed a doubt that the rupture could have occurred in consequence of obstruction, apart from some localised disease of the urethra.

*Mr. Maylard*, in reply, stated that rupture of the urethra in adults from impaction of a calculus is extremely rare; but that it is not at all an unusual result of that condition in children. He agreed that ulceration, due to a first impaction of the calculus farther back than where it was found, probably explained the position of the rupture.

### III.—CASE OF A SINUS OF THE NECK OPENING INTO THE PHARYNX.

BY MR. A. E. MAYLARD.

*Report by Dr. John Graham.*—Lizzie B., æt. 16, was admitted into the Victoria Infirmary, under the care of Mr. Maylard, on 10th November. About nine months ago, a small lump appeared on the left side of the neck, about the level of the thyroid, and at its posterior border. In about three months it burst, and since then it has continued to discharge a muco-purulent material. At first the lump was freely movable, but later assumed the character of an abscess. More recently she has occasionally felt pricking sensations on attempting to swallow, but nothing has ever been noticed, in the way of food or drink, escaping from the sinus. Although she has been under treatment, and care exercised in keeping the wound clean, there has been no sign of healing. Her general condition is good; she is well developed and well

nourished. There are no signs of tuberculosis about the body. On examining the neck, an irregularly-shaped ulcerated opening is seen opposite the posterior border of the thyroid. It measures about an inch and a half in length by about three-quarters of an inch in breadth. A probe inserted reaches upwards and backwards for about an inch and a half.

Some enlarged glands are felt in the neighbourhood of the sinus. There is a somewhat glazed appearance of the granulations lining the sinus, and there is no appearance of a healthy granulating surface. She was given milk to drink, but nothing was noticed to escape from the sinus.

An examination was made under chloroform, when the forefinger was found to pass quite easily behind the larynx and trachea and into the pharynx. Nothing further was done at the operation, and the after-treatment consisted in feeding the patient entirely by stomach-tube. By this means rapid improvement began to take place in the closure of the wound, so that, as now seen (four weeks after operation), the external wound is practically healed.

*Remarks.*—The point of chief interest in the case centres upon the cause of the fistula. Was it connected with the remnants of a branchial cleft? Had there been a pharyngeal diverticulum? Was it the result of a suppurating tubercular gland which had opened internally into the pharynx, and also externally on the skin? Could a traumatic injury, as by a fish-bone, have led to a perforation of the pharynx and the subsequent fistula? I confess I am at a loss to attribute to any one of those causes the rôle of supplying a satisfactory explanation, for there is something to be said for and against each. I believe, however, any connection with a diverticulum may be dismissed; and that, on the basis of probabilities, a remnant of a branchial fistula appears to offer the most feasible explanation.

*Dr. M. Logan Taylor* mentioned the case of a West African negro, who had swallowed a piece of catfish bone, measuring an inch and a quarter by one-eighth of an inch. This became impacted in the œsophagus; ulcerated through into the neck; an abscess formed, from which the bone was discharged, and a cervical fistula was formed, which remained open for a considerable time.



IV.—BOY IN WHOM EXCISION OF HALF OF THE LOWER JAW  
WAS PERFORMED FOR SARCOMA.

BY DR. JAMES A. ADAMS.

Donald M'K., æt. 16, was admitted to the Glasgow Royal Infirmary on 29th September, 1904. Patient had a large swelling of the lower part of the right side of the face, which had been gradually increasing in size for nine months. On examination, the swelling seemed to involve the whole right lower jaw from the mental foramen in front to the angle behind, being most marked exactly between these two points. It was hard, and seemed to have an outer covering of bone. There was no egg-shell crackle. The swelling extended into the mouth, but did not seem to involve the alveolus, though the right lower molar teeth were turned inwards. The skin over the outer side was not reddened, nor was it adherent. There seemed to be no glandular involvement, and no pain was complained of.

*30th September.*—To-day patient was examined under chloroform. The posterior lower molar of the right side was extracted, and a large quantity of foul-smelling pus came away by the opening. The finger could be inserted through the opening, and a large cavity was found in the lower jaw, the bone being ballooned out to a great extent.

*4th October.*—A counter-opening was made outside below the chin, and a tube inserted into the cavity of the bone.

*13th October.*—The cavity in the lower jaw has been syringed out daily with weak Condy's fluid.

*21st October.*—To-day about an inch of bone was removed from the right side of the lower jaw, just in front of the angle. The cavity was scraped out, swabbed with pure carbolic, and packed. The tissue removed was examined and reported as an adeno-sarcoma by Dr. Workman.

*4th November.*—There is still a foul-smelling discharge from the wound. The swelling seems to be increasing gradually in all directions.

*7th November.*—To-day the right half of the lower jaw was completely removed. The lip was split in the middle line, and the incision carried back along the lower margin of the ramus of the jaw. The bone was divided between the two central incisors by a Gigli's saw, and, after it had been separated from the soft tissues, the right half of the jaw was wrenched out. The main vessels were ligatured at once, and after that there was practically no hæmorrhage. The tumour

did not appear to extend beyond the middle line. It ballooned out a very large portion of the bone removed. There was a large cavity in the centre of the tumour, due to degeneration. The teeth were preserved in very good condition.

A drainage-tube was inserted at the posterior end of the wound. The margins of the skin were stitched together with silkworm gut.

The temperature before and after operation remained almost constantly at 99° to 100° F.

There was great pain in the mouth for a short time after the operation, but practically no bleeding. The mouth was washed out frequently with boracic and hazeline.

On the day following operation, sips of milk, beef-tea, and nutrient enemata were given. There was no pain, but patient complained of a bad taste in the mouth. The mouth was frequently washed out with boracic and hazeline. On the 11th and 12th November, there was much pain in the lower teeth and lip.

Eight days after operation the drainage-tube was removed, and three days later patient was allowed up.

*Professor Muir* dissented from the report of the pathologist. The tumour was not an adenoma, as the epithelial processes were solid. He thought it more probable that they represented aberrant development of tooth germs. Moreover, he could not regard the tumour as malignant, and thought it would not recur.

*Dr. J. H. Teacher* agreed with the President on both points.

#### V.—TWO ENLARGED PROSTATES REMOVED BY THE SUPRAPUBIC OPERATION.

BY DR. J. CRAWFORD RENTON.

CASE I.—Patient, aged 76 (placed under Dr. Renton's care by Dr. Joss, of Denny), who had spent two years of catheter life and suffered from chronic cystitis. The prostate was easily removed suprapubically, the patient making an excellent recovery. He is now (six months after operation) able to attend to his farm and to walk seven miles without any discomfort. He makes his water as he used to do when he was 40.

CASE II.—Patient, aged 60, with acute enlargement of the prostate superadded to a chronic condition, causing gradually

increased frequency in micturition, was placed under the care of Dr. Renton, when he was suffering from complete retention. This did not improve after a fortnight of drainage of the bladder by catheter, either interrupted or continuous, and therefore Dr. Renton advised suprapubic removal of the prostate. This was carried out with some difficulty, owing to the adhesions between the prostate and the pelvic fascia. He made an uninterrupted recovery, and reports himself as quite well.

*Remarks.*—The operation in the first case occupied a few minutes; the second case was extremely difficult, and it is well to bear in mind that it is not always an easy operation. At the same time, it seems to be easier than removing the prostate through a perineal incision. The suprapubic wound closes in from seventeen to twenty-one days if the cystitis has been relieved; if the cystitis is troublesome, the wound may be longer in healing.

*(The report of this Meeting will be continued in our next issue.)*

## OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1904-1905.

MEETING IV.—25TH JANUARY, 1905.

*The President, DR. J. K. KELLY, in the Chair.*

### I.—SPECIMENS.

A. BY DR. J. M. MUNRO KERR.

Dr. Munro Kerr showed two tumours of the uterus recently removed by abdominal hysterectomy.

1. *A large myoma invaded by carcinoma from the body of the uterus.*—The patient was seen by a well-known gynæcologist some three years before, and had been advised not to have the tumour, which was then without doubt a simple myoma, removed. Recently, excessive pain, hæmorrhage, and increase of size brought the patient to me. The operation was performed in one of the nursing homes, and the patient made an excellent recovery. There was, however, no prospect of the operation being a cure, as the tumour had

burst its capsule, and was adherent to the bowels and omentum, which was extensively infiltrated by secondary nodules.

2. *A myoma which had undergone hyaline degeneration.*—This tumour was removed from a patient about 50 years of age. I had twice tried to arrest the excessive hæmorrhage by curetting the uterus, but with little benefit. I removed the uterus a few days ago in one of the nursing homes. The patient is so far getting on perfectly well.

B. BY DR. J. K. KELLY.

1. A large myoma with a cyst in its upper part.

2. Large myoma. The history suggested pregnancy several years before admission.

3. A uterus, three months pregnant, with a myoma in its upper portion. There were also some small myomata in its lower part.

C. BY DR. G. BALFOUR MARSHALL.

1. *Double pyosalpinx with uterus removed by abdominal hysterectomy.*—J. D., aged 23, unmarried. First menses began at 18, were irregular every two to four months, and lasted one or two days. Menses were accompanied by dysmenorrhœa, coming on two or three days before the flow and lasting throughout. There was copious leucorrhœa during the intermenstrual periods. She suffered from attacks of burning pain in the back, and severe pain in the lower abdomen, frequently accompanied by diarrhœa. She also complained of dysuria and increased frequency of micturition. There were suspicions of gonorrhœa in the history. Examination showed extensive erosion of cervix, endocervicitis, endometritis, and pyosalpinx, all the organs being matted together by peritonitic adhesions. At operation, the small intestines were found all matted together over the whole pelvic brim, the adhesions being particularly dense between bowel and right annexa and fundus of bladder. The operation was tedious and difficult, the whole uterus and both annexa being removed. The patient apparently did well till the third day, flatus being passed, and the bowels moving twice slightly. During the afternoon of the third day she suddenly collapsed, and died twelve hours later.

2. *Dermoid of left ovary.*—Mrs. D., aged 30, six children: last, two years ago. The patient first noticed the tumour seven months ago, and was told she had a floating kidney. It changed its position, causing considerable pain when the

patient turned from one side to another, and was so movable that it could be easily pushed all over the abdomen from pelvis to hypochondriac region. When removed, the cyst was almost quite round, measured  $4\frac{1}{2}$  inches in diameter, and had a long pedicle. On section it was found to contain hair, besides the usual fluid.

3. *Zwanck's butterfly pessary worn for three years by a patient, aged 44.*—The pessary had ulcerated deeply into the lateral fornices of the vagina, with symptoms of constant pain, until the outer half of each wing was completely embedded and fixed by tissue which had grown through the loops. A thick band of cicatricial tissue on each side required to be cut through before the instrument could be removed.

#### D. BY DR. NIGEL STARK.

*Melanotic sarcoma of uterus.*—The patient, æt. 26, was admitted to hospital on 17th December, 1904, complaining of excessively severe abdominal pain, following a confinement five weeks before. The placenta had been removed manually by a midwife. The patient felt well until the fourteenth day, when she went out. That night she was seized with severe pain in the left iliac region. On admission, the patient was suffering from bronchitis, and had a temperature of  $103^{\circ}$  F. The uterus was curetted. Dr. Carstairs Douglas examined the sputum and the curetting. The sputum showed numerous alveolar cells in which pigment was present in small granules which had not the characteristic carbonaceous appearance. Various micro-organisms were present, but no tubercle bacilli. Sections of the curetting showed very unusual appearances. Bundles of ordinary muscular uterine tissue were densely infiltrated with masses of round cells, arranged in slightly columnar manner. At other parts quantities of granular black pigment were scattered over indefinite areas, and surrounded by dense masses of round cells. Microscopically, the appearances were typically those of melanotic sarcoma infiltrating the uterine wall. A few normal glands were evident at one part.

#### II.—SOME CASES OF UTERINE MYOMA, WITH REMARKS ON THE INDICATIONS FOR OPERATION.

BY DR. A. W. RUSSELL.

Dr. Russell's paper appears as an original article at p. 241. Dr. Munro Kerr said that the present trend of opinion

amongst gynæcologists was in favour of much earlier interference with fibro-myomata. It was, however, very difficult to say what were the conditions which indicated such treatment. Of course, hæmorrhage, pain, increase of growth, everyone now accepted as indicating immediate removal of the uterus or tumour. But what about the cases in which the tumour of only moderate size remained quite stationary, and caused no discomfort, &c.? Personally, Dr. Munro Kerr, while he would certainly not operate in cases of small myomata which were causing no symptoms, did approve of operative interference if they were of any size, for if they were of any size he invariably found that they grew larger, and had ultimately to be removed. The fact that the operation of hysterectomy was now so safe (the mortality was hardly over 2 or 3 per cent) encouraged us to recommend operative interference much more frequently. Supra-vaginal hysterectomy was the method he preferred, if it was at all possible. There was no doubt it was a little easier, and attended with a lower mortality than panhysterectomy. As regards ergot and electricity, he had never seen any benefit follow this administration, and he now considered such treatment hardly worthy of mention.

*Dr. MacLennan* instanced one case showing the difficulty of advising operation. The case had been treated many years previously by electrolysis, and had been claimed as a cure. The growth was mostly subserous, if not entirely so, and the only symptoms present were cardiac. The patient was near the menopause, and was very adverse to have an operation. The question whether a hysterectomy ought to include the cervix or be supra-vaginal was not considered to be of much importance.

*The President* remarked that Dr. Russell had omitted mention of myomectomy, which was the ideal operation for uterine myoma, although, unfortunately, it was only seldom feasible. Still, even in cases of multiple tumours, it was sometimes possible to enucleate the tumours from the uterine wall, and naturally in all cases of pediculated myomata no other operation should be thought of. With regard to the indications for operation, he thought the standpoint had completely changed of late years. Whereas formerly operation was regarded as justified only by the occurrence of serious symptoms, and anyone who operated for myoma had to plead very pressing reasons, the reverse was now the case, and it was rather regarded as proper to operate, unless there were strong reasons for not operating.

*Dr. Stark* said that in more than one respect he differed from *Dr. Russell*. No mention had been made of the operations of myomectomy and enucleation; and yet, when these can be safely performed in suitable cases, they are the ideal operations, in so far as they conserve the uterus while removing the tumour. *Dr. Stark* had, in one married patient, removed five or six tumours, and though there had never been pregnancy before, yet after the operation it occurred, and the patient had given birth to healthy children. He did not believe that whenever a fibroid tumour was discovered the patient should be advised to submit to immediate operation, and thus prevent possible future disasters. Each case required separate consideration and advice. It was to be regretted that greater unanimity in the profession did not exist on this point, as it was of daily occurrence that patients received directly opposing opinions.

III.—DOUBLE OVARIAN CYSTOMA AND UTERUS AFFECTED WITH MELANOSARCOMA; WHOLE ABDOMINAL AND THORACIC VISCERA STUDDED WITH INNUMERABLE MELANOSARCOMATOUS TUMOURS.

BY DR. G. BALFOUR MARSHALL.

*S. M'L.*, aged 30, was admitted to the Glasgow Royal Infirmary on 30th June, 1904, complaining of an abdominal swelling and gastro-intestinal symptoms. Her health seemed to have been good till November, 1903, when she began to suffer from epigastric pain, with a feeling of nausea after taking food. This continued, accompanied by such a progressive loss of strength, that about the middle of March, 1904, she was compelled to give up her daily work. In May she had in addition attacks of vomiting which persisted for a month, when, as the result of treatment, some improvement took place. This improvement, however, did not last long, as during the two weeks prior to admission to hospital her general condition became worse. She felt very weak, was fevered, and had severe sweating. Although on admission the abdomen was found markedly distended by a large cystic tumour, yet the patient had only been conscious of its presence for a few weeks. She had also suffered from abdominal pain, which, however, was never severe. Menstruation, which began at the age of 14, had always been regular, of the four-week type, lasting three or four days, and accompanied by sacralgia, which lately had been more severe.

During the intermenstrual periods there was leucorrhœa. Since March she had suffered from increased frequency of micturition, and the bowels were habitually costive.

On admission to hospital the patient looked ill and anæmic, with a temperature of 101·6° F.; pulse, 112; and respirations, 22. The tongue was dry and furred. Both feet and legs showed slight œdema.

*Examination.*—The abdomen was distended in its lower half to the size of a six months' pregnancy, and showed a faint linea nigra as high as the umbilicus. Percussion elicited dulness, extending upwards for 6½ inches from the symphysis pubis to the level of the umbilicus, and laterally for 3 inches from the middle line towards each flank, the tumour being 6 inches broad. A noticeable feature in connection with percussion was the variation in the area of dulness at repeated examinations. There was considerable tympanites, and the bowels overlapped the right side of the tumour especially to a varying extent, so that at one of the examinations the area of dulness even on deep percussion was only 3 inches broad. By palpation a tense ovoid cystic tumour could be felt arising from the pelvis, and resembling a six months' pregnant uterus both in size and shape. Auscultation was negative.

*Vaginal examination.*—The vulva and vagina were those of a virgin. The cervix was low down, and pushed close to the symphysis pubis by a cystic tumour which filled the whole pelvis and could not be moved.

Bimanually the uterus was found pushed against the anterior abdominal wall a little to the right of the middle line.

The tumour was diagnosed as a large multilocular cystoma, but from which ovary could not be determined. Subsequent *post-mortem* examination, however, proved that both ovaries were affected, one cystoma overlapping the other in such a manner as to make them apparently one tumour.

It was evident that the ovarian tumour could not account for the general condition of the patient, so that operation was out of the question.

There was at first a suspicion of typhoid, rendered more so by the presence of several rose-coloured spots on the abdomen and some enlargement of the spleen. The tongue, however, though dry and furred, was not like that of typhoid, and the bowels, when moved by an enema following on a dose of castor oil, showed a stool which, though very fœtid, was not suggestive of this fever. Widal's reaction was also negative. In view of the possibility of typhoid the urine was tested for Ehrlich's diazo reaction, but also with negative results. Simon



(quoted in Butler's *Diagnostics of Internal Medicine*) says that if this diazo reaction is not found in the second or third week of a supposed case of typhoid it is probable either that the case is very mild or that the diagnosis is wrong.

A positive reaction, besides being seen in the majority of enterics, is also obtained in various forms of tuberculous disease, septic conditions, &c.

The urine was acid; specific gravity, 1030, with a trace of albumen, but no sugar nor bile. After standing for some time exposed to the air it acquired a darkish-brown colour, not unlike what is seen after absorption of carbolic acid. At first I understood the urine was this colour when passed, and did not attach sufficient importance to it, merely contenting myself with excluding bile and phenol. It was not till the autopsy revealed melanotic sarcoma that the true nature of the pigment in the urine was suspected, and proved to be melanogen or melanin. V. Jaksch, in his *Clinical Diagnosis*, writes that the most sensitive test for melanogen is bromine water, which gives a yellow precipitate that gradually blackens. Another test is to add a few drops of a fairly concentrated solution of iron perchloride, which causes the fluid to turn grey, and if more be added a precipitate of phosphates falls, carrying the colouring matter with it. This, again, dissolves with an excess of the solution.

The presence of melanogen in the urine, although a useful aid to diagnosis, is not always obtained in cases of melanotic sarcoma, and this pigment may be seen in large quantities in wasting diseases. At the same time an earlier recognition of its presence might, at the least, have raised a suspicion as to the cause of the patient's symptoms.

From 1st to 4th July the patient's condition got steadily worse, the temperature ranging erratically between 101° and 103° F., and the pulse from 124 to 140 per minute. On the evening of 4th July she had an attack of dyspnoea. Though nothing definite was found in the lungs on admission, examination now showed the presence of râles, especially in the left base, with slight dulness to percussion, and a diminution of the respiratory sounds. Respirations were now 30 per minute.

One of the physicians saw her in consultation on the morning of the 5th, but would express no opinion as to the nature of the obscure disease.

Later on in the day the patient became collapsed, the pulse-rate rising to 168, with a falling temperature, and at 9 P.M. she died without a diagnosis having been made as to the cause of her general condition.

On 7th July a *post-mortem* examination was made by Dr. Workman, with the result that the thoracic and abdominal organs were found studded with countless melanotic sarcomata of various sizes. There were no external evidences of these. The detailed report is as follows:—

*Heart* normal in size, wall studded with small melanotic tumours.

*Lungs* voluminous, emphysematous, and studded throughout, but especially immediately beneath the pleura, with melanotic tumours of various sizes, from that of a pin-head to that of a bean.

*Liver* enlarged by the presence of numerous melanotic tumour nodules, some of which are as large as a Tangerine orange.

*Spleen* large and soft, and has a general pigmented appearance, but no definite tumour.

*Suprarenal glands*.—The left appears transformed into a melanotic tumour mass about the size of a Tangerine orange.

*Kidneys* show numerous small nodules under the capsule and throughout its substance.

*Bladder* has only a few nodules in its wall.

*Mesentery, intestines, and omentum* are studded with innumerable small nodules.

*Lymphatic glands* seem remarkably free from tumour formation. There is a multilocular cystoma of each ovary, the left one being fixed in the pelvis, while the right lies in the abdomen.

Both cystomata, as also the uterus, are studded with numerous small melanotic nodules, but one in the right cyst is the size of a walnut. The cysts contain a watery, brownish fluid due to the presence of melanin, and the inner walls are deeply pigmented with the same substance. Microscopical sections show that the cell protoplasm is first invaded, then the nucleus, when the whole cell is destroyed. Granules and needle-like crystals were seen in the sections, which may be some compound of melanin, as it does not seem to depend on the staining reagent used.

*Dr. Carstairs Douglas* said he was much interested in this communication, especially when taken along with the microscopic section of a curetting shown by Dr. Stark. In trying to diagnose melanotic sarcoma by the urine it must always, as Dr. Marshall had remarked, be kept in mind that the urine first passed might be of ordinary yellow tint. At this

stage it contained melanogen, a colourless chromogen which gradually became dark (formation of melanin) with time. He had applied the bromine and the ferric chloride tests to the urine in Dr. Stark's case with negative results. He did not know what the crystals could be which Dr. Marshall had found in the tissues from his case.

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## REVIEWS.

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*A Guide to Anæsthetics, for the Student and General Practitioner.* By THOMAS D. LUKE, M.B., F.R.C.S.Edin. Edinburgh and London: William Green & Sons. 1905.

THE second edition of this excellent little work is brought up to date by the inclusion of a chapter on ethyl-chloride, for which anæsthetic the author predicts a brilliant future. It also gives more prominence to mixtures of chloroform and ether than did the first edition. The footnote on page 5 is somewhat unfortunate and misleading, stating, as it does, that A.C.E. mixture consists of *equal parts* of alcohol, chloroform, and ether, though in a later chapter the correct composition is given.

Dr. Luke is strongly of opinion that a knowledge of more than one anæsthetic is absolutely necessary if the best results are to be obtained, but admits that chloroform is undoubtedly the one we could least do without in spite of its comparatively high mortality. (He gives this as at least 1 in 1,000, as against 1 in 7,500 for A.C.E. and C.E. mixtures; 1 in 10,000 for ether; 1 in 12,000 for ethyl-chloride; and an infinitesimal proportion for nitrous oxide.)

He states the facts for and against the various anæsthetics, local as well as general, very clearly, concisely, and without bias, and his views are quite in keeping with those of the majority of anæsthetists at the present time.

Whilst admitting that "attempts to develop accuracy of dosage with chloroform is in the right direction," he does not seem enamoured of the Vernon Harcourt or of the Dubois chloroform regulation apparatus, and mentions a case in which a death very nearly occurred with the former apparatus in the hands of a skilled and practised administrator. In this

connection he remarks, "The only way to secure increased safety with anæsthetics is to raise the standard of education of medical men on the subject."

The production of such a work in Edinburgh by the instructor in anæsthetics to the University surgical classes is specially important as an indication of the somewhat broader views on this subject which are gradually forcing their way in Scotland, where for so long the medical schools have remained absolutely loyal to chloroform as the only anæsthetic worthy of consideration. We consider the Edinburgh students fortunate in having such a work dedicated to them and brought prominently before them by the author, their instructor in anæsthetics.

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*Husband's Forensic Medicine, Toxicology, and Public Health.*  
Seventh Edition. Revised and enlarged by R. J. M.  
BUCHANAN, M.D., and E. W. HOPE, M.D., D.Sc. Edinburgh:  
E. & S. Livingstone. 1904.

FOR many years "Husband" was a name familiar to the senior student of medicine, and was easily the most popular work on the subjects among students preparing for examination. Whether that popularity will be retained by the issue of the present edition is, unfortunately, exceedingly doubtful. The usual process of expansion, not always advantageous, has been coupled with an attempt to retain the distinguishing features of former editions of "Husband," with but ill success. The unfortunate student will find no advantage in this work, as to succinctness, over quite a number of similar text-books on the subjects at present available. Formerly "Husband" appealed particularly to Scottish students, more especially in that part devoted to public health; but in the present edition the work becomes an English manual pure and simple. Of course, it may be said that the expansion is no disadvantage; but the fact remains that for subjects which occupy in the medical curriculum but a few hours, comparatively speaking, the student cannot be expected to be *au fait* with the wilderness of detail with which he is here confronted. The time has come when the three subjects should be disassociated, and the production of the present work is only an additional argument for the same.

Dealing, however, with the work as it stands, it is clear that the authors have not had the courage to rewrite the

whole work, and the result is a kind of patchwork, which does not tend to lucidity.

On pages 28 and 29 there is not much evidence of "revision," the text being copied practically *literatim* from the earlier editions, and the old misstatement that "cicatrices produced in childhood may grow in length but not in breadth" repeated.

Chapter III seems strangely familiar on reading it over, and on referring to another well-known text-book on the subject, it is found to be what may be termed a "fair copy" of Glaister's *Medical Jurisprudence, &c.* (page 96 *et seq.*) The similarity of expression is so striking as to constitute a unique psychological phenomenon, or—but perhaps a few of the paragraphs placed in parallel columns will reveal a correspondence which undoubtedly bears out the statement of the authors in the preface that "the works of . . . and Glaister have been consulted."

Glaister (page 101). *Cessation of circulation tested by—*

- (a) Auscultation.
- (b) Manual exploration of principal arteries, as carotids, for pulsation or thrill.
- (c) Applying a ligature tightly round a finger, and observing whether or not a bloodless zone forms at the seat of the ligature and a zone of livid redness on its distal side (Magnus' test).
- (d) Applying pressure to the finger nail and observing whether or not at the moment of application of pressure the nail becomes white, and on relaxation of the pressure again becomes pinkish coloured.
- (e) Dropping a spot of melted sealing wax on the fore-arm and observing whether or not redness or vesication ensues.
- (f) Holding the web of the fingers against a strong light, natural or artificial, and observing whether the web is translucent or not.
- (g) Inserting a bright needle deeply into a fleshy part of the body and observing whether it is tarnished or not on withdrawal after it has been allowed to remain *in situ* for about ten seconds.

Husband (page 44). *Tests for the cessation of the circulation—*

- (a) Auscultation.
- (b) Manual exploration of the principal arteries for pulsation or thrill.
- (c) Magnus's test—applying a ligature tightly round a finger, and noticing whether or not a bloodless zone forms at the seat of ligature, and a zone of livid redness on the distal side of the ligature.
- (d) Applying pressure to the finger nail, and noticing whether the colour disappears on pressure, and a pink tinge appears after relaxing the pressure.
- (e) Applying heat, such as dropped melted sealing wax on the skin, and observing whether or not redness or vesication ensues.
- (f) Holding the hand, with the fingers abducted, against a strong light, and observing whether or not the web of the fingers is translucent.
- (g) Inserting a brightly polished needle into a fleshy part of the body, allowing it to remain for ten seconds or so *in situ*, and noticing whether it is tarnished or not on withdrawing it.

- (h) Injecting hypodermically a solution of fluorescein (resorcin-phthalein and sodium bicarbonate, a gramme of each dissolved in 8 c.c. of water) (Icard's test). Where cessation of circulation has occurred, no local discolouration of tissue results; but if circulation still continues, a yellowish-green colouration of the skin will take place round the injected part, and the substance may be detected in the blood at some distance from the part injected by pricking the skin. By immersing some white silk threads in the blood, and afterwards boiling the threads with water in a test-tube, a greenish coloured solution will result which will dye the threads.
- (h) Injecting hypodermically a solution of fluorescein (resorcin-phthalein and sodium bicarbonate, a gramme of each dissolved in 8 c.c. of water). No local discolouration of the skin takes place if the circulation has ceased; but if not, a yellowish-green colouration of the skin occurs round the seat of injection, and the substance may be detected in the blood at a part some distance from the seat of injection. By immersing some white silk threads in the blood drawn at a distance from the prick, then boiling them in distilled water, the latter will have a greenish colour if the fluorescein has been circulated (Icard's test).

The above is only one instance of numerous direct quotations appearing throughout without the use of inverted commas. It will suffice to point out other examples occurring on pages 48, 49, 94, 95, 104, 115 (where a printer's error in Glaister is apparently accepted as correct by Dr. Buchanan).

It is manifestly a little difficult to review this portion of the work, which is in great part a pure compilation from other writers; but a number of minor points deserve mention. On page 125 it is stated that "it is possible that the appearance of a bruise inflicted during life may be produced within two hours after death." This is not only erroneous, but entirely misleading. On page 131 no distinction is drawn between suicidal hanging and judicial (homicidal) hanging. On page 141 the case said to be recorded in the *Lancet* is from the *Medical Gazette*. On page 206, line 11 from top, *possessio patris* should be *possessio fratris*.

In the section on Toxicology the classification adopted, while possibly of scientific value, will only perplex the average medical student. On page 273, 10 per cent should be 3 per cent. On page 276 the stomach *pump* is recommended in cases of carbolic acid poisoning, although on page 274 it is pointed out that considerable softening and peeling of the mucous membrane may occur as a result of the action of the acid. On page 282 it is stated that the fatal period in poisoning by hydrocyanic acid is from two to five minutes; this surely refers to potassium cyanide, and not to the acid itself.

On page 283 the student is led to infer that the bicarbonates of sodium and potassium are poisonous. The formula of white arsenic is not given on page 296, and its chemically correct title of arsenious anhydride is not referred to.

The tests for arsenic do not include the important ones of Fleitmann and Bergeret. A number of the poisons included in this section might, with advantage, have been deleted in a work which does not pretend to be a text-book; examples of this are castor oil, elaterium, lobelia.

Girdwood and Rodger's method for the separation of alkaloids is not indicated, although it is simpler and, in some hands, more effective than several of the other methods which find a place in the present work.

Orthographical errors are so numerous as to suggest very careless revision of the proofs. Instances are found, to select a few out of the many, on pages 108 (Schönlein for Schönbein), 110 (Leichmann for Teichmann), 113 (Stoke's for Stokes's), 128 (pluræ for pleuræ), and 161 (ballotement for ballottement).

The method of measurement of the corpuscles figured on page 105 is not stated, and the scales have thus only a relative value as to corpuscular size, which would have been equally evident in their absence.

Some of the illustrations are good; some are bad. Some convey a little information to the student; others are useless, or have a negative value. Figs. 4 and 5 are particularly misleading. Figs. 21 and 22 are not only of doubtful value, but the student will look in vain for any reference to them in the text. While many of the dark ground illustrations in the section on toxicology are quite pretty, they are of no practical value whatever to the student, and are quite out of place in a work like the present.

In the section on Public Health an introductory chapter would have enhanced what value it possesses as it stands. This section is largely a reprint of the earlier editions, with a number of additions, some of the latter being of doubtful value. On page 454 the statement that the height of the water in a well "may be taken as a good guide as to the amount of the subsoil water" is misleading, quite apart from the ungrammatical manner in which the sentence is put. On page 461 the student will do well to delete asphalte and pitch as being proper materials for damp-proof courses. No reference is made in the text to the figures on pages 462 and 463; the student may not find them self-explanatory. On page 468 is found the statement that "in times of rainfall the rain water pipes are running full;" this may occasionally happen under

very exceptional circumstances, but to have it occur as a regular thing (as the writer infers) would show the pipe to be insufficient in bore. On pages 474-5 the methods recommended "to test the soundness of house drains" are almost ludicrous, and although a figure of a smoke-testing machine is given, no reference is made to it. On page 496 (top) the figures given are long since out of date, as far as Glasgow is concerned at least. On page 528 the writer seems to insinuate that the law of diffusion of gases does not apply to the watery vapour present in the air of an apartment. On pages 534 and 535 the description of Pettenkofer's method for the estimation of  $\text{CO}_2$  in air has certainly several novel elements, which will be interesting reading to anyone who has performed the analysis in the usual way. On page 536 we are informed that "oxygen and hydrogen have of late been liquefied;" and, further, the up-to-date information that "Professor Dewar has succeeded in liquefying air." On page 540 no account has been taken of the more recent experiments of Haldane, &c., which go to show that the old standard of 0.6 part per 1,000 of  $\text{CO}_2$  in the air of inhabited rooms is unworkable in practice. On page 545 the punkah is described as a simple method of artificial ventilation; the real use of the punkah is to produce a *cooling* effect by the production of to-and-fro motion of air within the apartment. The description of thermometric scales on page 559 is misleading as a whole, and erroneous in some of the details. The very useful combined maximum and minimum thermometer is not mentioned. On page 576 the simple form of anemometer known as Dine's is not indicated. The writer attempts to prove, by an illogical syllogism on page 580, that "a pound of water, in cooling from boiling point to zero, gives out 900 caloric units." On page 595 (top) the writer perpetuates an old and evident error which appears in earlier editions of the present work—the percentage of recoveries being tabulated as practically the same as the percentage of deaths, although the actual figures are 343 and 19 respectively. On page 600 it is stated that the adoption of the Infectious Diseases Notification Act of 1889 is voluntary. The "Extension" Act of 1899—along with the Public Health (London) Act of 1891 and Section 44 of the Public Health (Scotland) Act of 1897—makes the original Act compulsory throughout Great Britain.

The percentage of male to female births is given on page 602 as 1,004 to 1,000. This is, perhaps, a misprint, but if so is too serious to be passed over lightly.

The process of disinfection is not described in the pages



dealing with the subject, and the matter in these pages is lamentably out of date.

It is to be hoped that in the next edition the whole of the section on Public Health will be rewritten and brought into line with modern conceptions of the subject.

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*Atlas and Epitome of Diseases of the Mouth, Pharynx and Nose.* By DR. L. GRÜNWALD. Second Edition. Authorised Translation from the German. Edited, with additions, by J. E. NEWCOMB, M.D. London: W. B. Saunders & Co. 1903.

THE valuable atlases of Mikulicz and Michelson, Krieg, and Gerber, depicting respectively diseases of the mouth, throat, and nose, are beyond the reach of the ordinary student or general practitioner, owing to their cost. We have here the result of a laudable endeavour to present within the compass of a comparatively small and inexpensive volume a representative collection of coloured illustrations, and a short explanatory text-book, of diseases of all the regions mentioned.

The sketches, we consider, have been well done, and as a rule are unmistakable. In a few instances, however, either the appearances are not characteristic, or we would beg to take exception to the diagnosis. Thus, Plate 2, Fig. 2, representing a tubercular ulcer at the angle of the mouth, would also serve as an illustration of the much commoner appearances observed in secondary syphilis. Plate 14, Fig. 2, does not represent what we regard as Bednar's aphthæ or ulcers, nor do we think the explanation of their origin at p. 58 probable. The illustrations of the naso-pharynx are rather diagrammatic, and we regret to be unable to make much of the sketches of intranasal conditions. The coloured drawings of the sections of morbid products from the nose and throat should prove useful. We regard with doubt the author's observation of ulceration of the middle turbinate in suppurative disease of the antrum and frontal sinus (Plate 37, Fig. 2; Plate 38, Figs. 1 and 2).

The second part of the volume, extending to over two hundred pages, deals with the anatomy, physiology, and pathology of the regions portrayed in the plates.

Dr. Grünwald is best known in connection with his writings on nasal suppurations. In the work before us it is, however, just with the portion which deals with accessory sinus disease that we would find most fault. He maintains that the antrum of Highmore in all probability is the seat of chronic

disease oftener than any part of the body; certainly the result of autopsies affords some support to this view. We do not agree with him, however, in assigning to the antrum so important a part in the production of post-nasal discharges and turbinal hypertrophy as he does. We would also express doubt as to the occurrence of ulceration of the nasal mucous membrane in the neighbourhood of the ostium maxillare as a consequence of antral suppuration in the absence of a specific process; as to the possibility of cysts of the antral lining membrane causing distension of the cavity; and as to whether protracted suppuration, when not due to a constitutional disease, ever leads to ulcers of the mucous membrane of the antrum or necrosis of its walls.

The author states (p. 211) that in deviation of the septum the narrowing of one side is compensated by a corresponding widening of the other. He seems to think that the mere passage of the air through the nose is in itself sufficient, whereas its mode of distribution in the nasal cavities is all important.

These, however, are minor objections, and the book taken as a whole is a distinct success. The author has many fresh ideas which, with a terse and attractive style, have contributed to the production of an excellent informal essay. We have read the book with pleasure and profit, and believe that no one interested in the subjects treated, whether specialist or general practitioner, could fail to do likewise.

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*The General Pathology of Inflammation, Infection, and Fever.* By E. W. AINLEY WALKER, M.A., D.M. London: H. K. Lewis. 1904.

THESE twelve lectures were delivered at Guy's Hospital in 1902, at which time their author held the post of Gordon Lecturer in Experimental Pathology. They were originally published in the *Clinical Journal*, and now that they are collected together in book form, we are sure they will have the wider appreciation their merits demand for them. For in form as in subject-matter the lectures we consider quite admirable. Their style is simple and agreeable; their facts are well arranged, sifted, and valued; and any conclusions arrived at, if not always convincing, are always worthy of respect and consideration. The chapters which deal with "infection" we think specially useful, for in them we have set down in a clear way a *résumé* of our most recent knowledge

regarding such subjects as immunity, toxins, antitoxins, agglutinins, bacteria and their anti-bactericidal substances. This is an aspect of medicine which to many is very recent and not a little difficult, and to such, we feel sure, this little book of Dr. Ainley Walker will be very welcome.

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*Handbook of Diseases of the Ear, for the Use of Students and Practitioners.* Second Edition. By RICHARD LAKE, F.R.C.S.Eng. London: Baillière, Tindall & Cox. 1904.

A SECOND edition of this work has been called for within a year, which shows it supplies a want that has been felt by the student and practitioner. There are a few verbal alterations and corrections, but practically the text is the same as that of the first edition, which lately we had the pleasure of reviewing. We cordially recommend it as an excellent text-book.

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## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

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### MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

**Three Cases of Primary Sarcoma of the Stomach.** J. A. Sipher (*Amer. Med.*, 31st December, 1904).—CASE I was a man, aged 44. His chief symptoms were abdominal pain, a feeling of exhaustion, and inability to sleep on account of the pain. The appetite was good, and there seems to have been no gastric symptoms; the bowels were rather constipated. On physical examination, a hard nodular mass was made out in the splenic region; otherwise, there was nothing special to note. At the *post-mortem* a tumour growth was found situated along the posterior wall of the stomach, toward the cardiac end. The tumour was flattened from before backwards, and measured 12 cm. in length, 8 cm. in breadth, and 3 cm. in thickness. Microscopic examination showed it to be a round-celled sarcoma, the cells being large with deep-stained nuclei. The mucosa of the stomach showed infiltration of the stroma, with cells apparently of the same character as those of the tumour. In most places, however, the mucosa was sharply separated from the tumour by an increase of fibrous tissue. There was no evidence of glandular involvement or of secondary growth elsewhere.

CASE II was a woman, aged 44. Her symptoms began in November, 1901, with burning pain in the stomach, vomiting, and diarrhoea. Four months later a diagnosis of malignant disease of the pylorus was made, for which a gastro-enterostomy was performed. This gave great relief for a time, but the patient died in December, 1903, eighteen months after the operation.

*Post-mortem.*—The pylorus was found to be entirely occluded by a tumour 5 cm. in thickness, and extending 11 cm. along the lesser curvature of the stomach. Nodules were to be seen on its peritoneal surface, and the growth extended along the portal vein, but there was no other evidence of metastasis. Microscopically, the tumour in places was very fibrous, but in others much more cellular. The cellular elements consisted almost entirely of large cells, with large vesicular nuclei. The mucosa in almost all the sections was normal. "The tumour apparently arose by a proliferation of the endothelium of the lymph vessels in the submucosa, and advanced by direct extension along the lymph channels. There was nowhere any involvement of the epithelial structures, no alveolar arrangement, no lymph gland or liver metastasis to suggest an epithelial origin for the tumour." There was, however, a family history which showed that two sisters had died of cancer of the stomach, and that the father had had an epithelioma of the lip.

CASE III was a woman, aged 50. The symptoms of her illness began in January, 1903, with a feeling of "weakness" under the right costal margin. Pain was subsequently felt in this area, and at times was very severe. The appetite throughout was good. Physical examination (January, 1904) showed a mass, measuring 8 cm. by 5 cm., in right hypochondriac region. It was dull to percussion, but fully movable. A test-meal gave total acidity 0.25 per cent, and no free hydrochloric acid. The tumour was removed by operation, and was then found to involve the whole of the lesser curvature of the stomach. The mucosa was apparently not involved. Microscopically, the tumour was found to be a giant-celled sarcoma.

In a paper by Dr. W. T. Howard in the *Journal of the American Medical Association* (2nd February, 1902), 61 cases of primary sarcoma of the stomach are analysed. Since then 5 other cases have been reported in various journals, and with the 3 cases just recorded we have a total of 69 cases in all recorded up to the present time.

**Two Cases of Stokes-Adams' Disease, with Autopsy.** By Dr. Eugenio Medea (*Le Prog. Méd.*, 4th February, 1905).—CASE I was a man, aged 52, with dilated heart, V.S. mitral murmur and signs of arterio-sclerosis. Pulse numbered 24 per minute; the urine was normal. On 21st September, he was observed in one of his fainting fits. To begin with, he experienced a feeling of heat passing up the back into the head, along with an indefinable feeling of prostration. There was also vertigo and noises in the ears. After two or three minutes he lost consciousness, but there were no convulsive movements. The pulse now numbered 6 to 8 per minute. On regaining consciousness, a few minutes later, the pulse became very rapid, 134 per minute; but this soon disappeared, and the pulse resumed its normal rate of 24 to 28 per minute. During the next two days he had many seizures similar to the above. On 1st October the pulse was noted to be 10 per minute, and the paroxysm for the first time was varied by epileptiform convulsions developing during the period of unconsciousness. The convulsions lasted for eight minutes, but there was no cry, and the tongue was not bitten. On 3rd October a similar convulsion came on, and patient died the next day, suddenly, during an attack. At the *post-mortem* there was seen to be a degree of fatty degeneration of the heart, and some slight changes in the kidneys; but there was no lesion in the nucleus or roots of the vagus, and no other abnormality of the nervous system.

CASE II was a man, aged 65. For a year past he had had attacks of vertigo, with loss of consciousness. On examination, the arteries were atheromatous, murmurs were heard over the greater part of the cardiac area, the pulse numbered 28, and respiration was of Cheyne-Stokes' character. The urine contained a considerable amount of albumen. While under observation he had frequent attacks of syncope, and with many of the seizures he had epileptiform fits similar to those of Case I. The autopsy showed atheroma of the cerebral vessels, atheroma of the aorta, fatty change in the heart, and some interstitial overgrowth in the kidneys. Nothing abnormal

was found in the medulla or in its nerve roots. It is to be noted, however, that in both cases the medulla was fixed in Müller's fluid, and that the examination of the ganglion cells of the nerve nuclei could not therefore be very satisfactory. Dr. Medea discusses at some length the pathogenesis of Stokes-Adams' disease. He holds that the slow pulse cannot account for the attacks of syncope and convulsions, that there is no casual relationship between them, and that their association is more or less an accident. The syncope and convulsions he regards as a senile epilepsy, a condition which is found associated with arterio-sclerosis and old age. It is the association of the epilepsy with slow pulse which makes the Stokes-Adams' phenomenon such a grave disorder.

**Amyotrophy in a New-born Child.** By M. Comby (*Le Méd. Mod.*, 2nd December, 1904).—The babe was 3 months old, and a healthy-looking child. Its birth was quite natural. But ever since birth there had been complete paralysis of the arms and legs, as well as of the muscles of the neck. The intercostals were also paralysed, and the cry was feeble; but swallowing was quite normal. The sphincters were intact, as were also the cranial nerves. The knee reflexes were absent, and there was no response in the paralysed muscles to the Faradic current. Sensation was normal. Although the child was fat, one could feel on palpation that the muscles of the limbs were greatly atrophied. The amyotrophy was evidently of spinal origin, and resembles the cases of family amyotrophy published by Hoffmann. In these cases there was atrophy in the anterior horns and in the anterior roots throughout the whole extent of the spinal cord. The condition differs from infantile palsy by the symmetry and diffusion of the atrophy.

## SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

**The Technique of Cystoscopy.** By Arthur H. Burgess, F.R.C.S., Manchester (*The Medical Chronicle*, December, 1904).—The following practical points may be extracted from this paper:—

Burgess sterilises his cystoscope by washing the shaft and beak with soap and water, paying special attention to the crevices around the prism and glass window, then immersing the whole length of the shaft in pure carbolic acid, contained in a tall, narrow vessel, after which it is transferred to a similar vessel containing 1 in 60 carbolic lotion, till required for use.

Sterilised glycerine is the most satisfactory lubricant. For a successful examination by cystoscope the urethra must be wide enough to allow the passage of a No. 22 French scale bougie; the bladder should be able to hold at least 6 oz. of fluid, and the bladder contents must be at least approximately clear. If the urine is clear, it may be utilised as a medium for the examination, the patient retaining it for several hours prior to the latter; diuresis may be encouraged by giving hot tea or whisky and water about an hour previously. By using the urine thus, the necessity for irrigation or injection of the bladder prior to the examination is avoided—a great advantage, particularly where a soft villous tumour, or other condition liable to cause ready bleeding, is being dealt with. Where hæmorrhage occurs, and persists in spite of irrigation with warm fluid, the introduction of about 3 oz. of a 1 in 5,000 solution of adrenalin chloride into the empty bladder may be useful. It should be left in for five minutes.

Irrigating cystoscopes are not generally satisfactory, or effective in keeping the fluid clear enough for a proper examination, where hæmorrhage is at all free.

Distension of the bladder by aseptic air, oxygen, or other gas, may be occasionally useful where the liquid medium persistently becomes turbid, but examination can only safely be carried out with a "cold" lamp.

The amount of fluid in the bladder is important; it should not be less than 6 oz. For examination of the trigone and ureteric orifices a moderate degree of distension is desirable, say 10 oz.; if the distension is less, the orifices may be hidden by folds of mucous membrane. The apex of the bladder is best examined with a very slight degree of distension; if over 12 oz. are used, the apex is so far removed from the prism as to be practically invisible.

In most cases general anaesthesia is advantageous, and in many essential, especially where there is any bladder irritability. "If local anaesthesia be employed, 4 drachms of a 5 per cent solution of  $\beta$ -eucaine may be injected through the catheter used for washing out the bladder, the catheter being slowly withdrawn during the injection of the last few drops to allow the drug to come into contact with the urethral wall." Immediately after the examination, should cocaine have been used, the bladder should be emptied and washed out; as, although the healthy vesical mucosa does not absorb cocaine to any extent, the diseased mucosa may.

The lithotomy position is the most suitable for examination; the thighs should not be flexed on the abdomen to a greater degree than a right angle. To obtain the best view of the ureteral orifices, the pelvis should be raised on a sand-pillow.

The base of the bladder, with the trigone and ureteral orifices, as the most important region, should be first examined; turbidity of fluid, should it develop during the examination, will appear earliest there.

The instrument should be withdrawn until the prism is just within the vesical orifice of the urethra, and the edge of the latter definitely located. Then, pushing the shaft further into the bladder, the trigone, the plica inter-ureterica and the ureteric orifices are systematically examined. Flow of urine from the ureteral orifices may be watched, and any escape of blood or pus from either of these detected, if present. The rest of the bladder, apex, and anterior wall is then to be carefully gone over.

Sudden disappearance of the light may be due to fusion of the lamp, defect in electric circuit, burying the lamp in substance of a soft tumour, contact of the beak with bladder wall, so as to obscure the window, withdrawal of instrument within prostatic urethra, or obscuration of the lamp or prism with blood-clot or pus.

As regards the interpretation of the cystoscopic images, the difficulty of the beginner is chiefly due to the reversal of the image. It is well to remember that that reversal is only in the vertical plane—objects seen to right or left of the field are really in these positions, i.e., an object seen to the right is in the left side of the bladder.

**The Cystoscope in Prostatic Hypertrophy.** By Hugh H. Young, M.D., Baltimore (*Bulletin of the Johns Hopkins Hospital*, November, 1904).—Appreciating, after much experience, the great advantage of the knowledge obtained by cystoscopic examination before operations on the enlarged prostate, Young had constructed in 1900 a cystoscope so designed as to enable him to look almost directly backwards so as to view the prostatic orifice and its surroundings. Later, both Nitze and Schlagintweit devised cystoscopes with a like object—the so-called "Retrograd Kystoskop."

Ingenious as each of these various instruments was, Young now admits that he has been forced to abandon all as entirely unsatisfactory, and chiefly for these reasons:—

1. As the rays of light must be twice reflected, much light is thereby lost, the size of the field is reduced, and the object viewed is more distorted and less distinct than is desirable.

2. The final interpretation of the four or more different observations in the four cardinal directions (each field inverted) is, in his experience, more difficult than with the plain cystoscope.

3. Only a small portion of a large intravesical outgrowth can be seen at the one view, and it is impossible to form any conception of the size of the entire mass.

4. The "retrograde cystoscope" is not suitable for careful study of the bladder, and must be supplemented by using the ordinary instrument. The extra instrumentation thus necessitated is a clear drawback.

Recognising the insuperable objections to his own instrument as to the others, Young set himself to devise some rational method of facilitating the estimation of the intravesical portion of the enlarged prostate by means of the simple cystoscope.

His plan is fully described in this paper, and illustrated by numerous charts, which must be seen to be adequately comprehended. The plan is, when once grasped, a simple enough one, but its development suggests much work and no little ingenuity.

Shortly put, it may be said, that it consists in recording in a systematic fashion the different views obtained in the different cardinal directions around the prostatic orifice. Using at first four, Young now employs eight circles, arranged in a circular fashion. Having these ready in blank form, the consecutive pictures obtained are recorded in them, until eight inverted pictures are obtained, showing the outline (inverted) of the entire vesical margin of the prostate. By simply reversing the circles, actual (non-inverted) pictures of the prostatic orifice can be obtained.

Later, to the inner circle of eight circles Young added an outer square of sixteen circles, in which can be recorded such other items as additional views of the clefts, the relative position of the ureters, or the occasional presence of vesical tumours, calculi, diverticula, &c. In this way has been obtained a blank chart, which can be used as a routine in all prostate cases, and a valuable record and pictorial representation made of the actual conditions present. Young has thus made and preserved records of over two hundred cases, and in this paper he fully explains the method, the interpretation of the records, and the bearing of the latter upon the operative or other treatment to be adopted. The cystoscopic interpretation has been often confirmed by subsequent operation, and its value is illustrated by a series of representative cases with which the paper concludes.

To any one using the cystoscope, the paper and illustrative charts will be found of exceptional interest and value.

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## MATERIA MEDICA AND THERAPEUTICS.

By JOHN WAINMAN FINDLAY, M.D.

**The Physiological Action of Digitalis: Its Use in the Treatment of Cardiac Disorders.** Charles Sajous, M.D. (*Monthly Cyclopaedia of Practical Medicine, Phil.*, 1904, vol. vii, pp. 281, 321).—The physiological action of digitalis upon the heart and blood-vessels is well known, and has hitherto been considered as the direct result of the drug upon the cardiac and arterial muscle. Sajous, however, points out that the solution of the drug in the blood-vessels, when administered in full doses, is of a strength which, when applied directly to the heart outside the body, produces absolutely no effect; and that this degree of concentration will only obtain if the drug is not acted upon by the tissues and fluids of the body.

The effects of the administration of digitalis and of suprarenal extract are practically the same, and the blood of the inferior vena cava produces similar results, so he suggests that it is by its action on the adrenals that the result is produced.

The pituitary body, he maintains, governs the secretory activity of the

adrenals, and experimentally he finds that section of the path between the pituitary body and the adrenals arrests and destroys the action of digitalis, a result which is corroborated by Traube and Bezold, and Boehm. He thus considers that the function of digitalis is to stimulate, by its action on the pituitary body, the secretion of the adrenals, and so increase the proportion of adrenal secretion conveyed to the heart. The adrenal secretion, too, during its passage through the lungs, becomes oxidised, and, as a constituent of both the plasma of the blood and its red cells, supplies all the tissues of the body with their oxygen.

Digitalis thus increases indirectly the functional activity of all the organs, and the vasomotor centres being rendered hyperactive, a general vasoconstriction and a heightened arterial pressure follow.

The so-called cumulative action of digitalis is the result of the widespread vasoconstriction which ensues from its prolonged or excessive administration. The cardiac arteries are, of course, affected, and from the defective blood-supply to the cardiac muscle, the contractions of the heart become weak and irregular.

In his second paper, Sajous points out that adrenal extracts are, as a rule, ineffective when given by the mouth, but that they produce marked, though temporary, results when administered by intravenous injection. Digitalis is to be preferred, as its action on the adrenal glands is more persistent, and the adrenal secretion is, in consequence, in excess in the blood for some considerable period.

In conclusion, he formulates the varieties of cardiac failure in which digitalis is indicated, and points out that it is most useful in failure of the right heart, as its defective muscle is acted upon by the adrenal secretion in its greatest concentration, and unaltered by oxidation in the lungs. He believes that the foramina Thebesii are the channels through which absorption takes place.—J. M. C.

**Treatment of Exophthalmic Goitre by the Antithyroid Serum of Moebius.**—This serum is nothing else than the serum of thyroidectomised sheep. Six weeks after the extirpation of the thyroid, these animals are bled; their serum is mixed with 0.5 per cent of phenol, and this is put up for sale in hermetically sealed tubes containing 10 cc. This serum is administered by the mouth; it is recommended that it be given with a little wine; the dose is 5 cc. per day.

Hempel (*Münch. Med. Wochens.*, 1905, No. 1, p. 15, and *Gaz. des Hôp.*, 1905, p. 79) reports the case of a woman in whom this mode of treatment rapidly brought about an improvement in the general condition, an increase in weight, a notable diminution in the size of the thyroid tumour and in the degree of the exophthalmos, while, at the same time, the pulse became slower and more regular.

Thienger (*Ibid.*) reports four cases. In the first, the therapeutic result was nil; in the second and third, the general condition was improved, the body-weight increased, and the frequency of the pulse diminished. The fourth patient was more gravely ill; she suffered from a continued pyrexia, and was constantly menaced by syncope. In this last case, the effect of the anti-thyroidine seemed to be the most favourable; at the same time that the temperature returned to normal the exophthalmos had almost entirely disappeared, the thyroid tumour had greatly diminished in size, and tremor had ceased; next the heart slowed down and became regular—in short, the patient, whose general condition had necessitated confinement to bed, rapidly recovered her health and became able to get up and go about. Sainton and Pisanti (*Revue Neurol.*, 1904, p. 1111, and *Gaz. des Hôp.*, 1904, p. 1442) report three cases that had been unsuccessfully treated by other methods. They gave smaller doses than the observers already mentioned—five to twenty-five drops of the blood or serum (the latter was found to be more active) of thyroidectomised sheep. One case is described as cured, while amelioration of all symptoms occurred in the two others.—J. W. F.



**Narcyl: Chlorhydrate of Ethyl-Narceine.** Debono (*Th. de Paris*, 1904, and *Gaz. des Hôp.*, 1905, p. 22; also Pouchet, *Ibid.*, 1904, p. 1317).—Narcyl is the chlorhydrate of ethyl-narceine. Narceine itself is obtained by separating narcotine from the residue left after extracting morphine and codeine from opium. The separated narcotine is then combined with iodide of methyl, and this compound is treated with potash. Thus is prepared the pseudo-narceine of Rosen, which the recent researches of Freund have shown to be identical with narceine. In the attempt to exalt the properties of narceine, a series of ethers of this product was made. Of this series, the chlorhydrate of ethyl-narceine proved the most interesting. It is a crystalline substance of definite chemical composition, and is sufficiently soluble to allow of its being practically employed. It is only slightly toxic, and is considerably less toxic than the ethers of morphine.

Its physiological properties place it alongside the analgesics and sedatives of the nervous system. As a special characteristic, its marked depressant action on the pneumogastric and splanchnic nerves make it an antispasmodic of the first order, and very specially a sedative for cough. It does not exert any influence on the digestive apparatus, though it may diminish peristalsis by reason of its inhibitory action on the splanchnic and pneumogastric. It does not appear to have any important influence on the secretions, and certainly does not embarrass urinary secretion.

Its local and general analgesic action make it, in certain cases, a valuable substitute for morphia, without any of the inconveniences of morphia. It may be recommended very specially as a cough sedative, and Pouchet recommends that, prior to the administration of chloroform, narcyl should be given in order to diminish the excitability of the central nervous system and the pneumogastric.—J. W. F.

**The Preventive Treatment of False Croup.** Couder (d'Alençon) (*J. Méd. Bruxelles* and *La Tribune Méd.*, 1905, p. 8).—When a child of from 2 to 5 years suffers from a cold, and when at night he has a stridulous or hoarse cough, with wheezing on inspiration, Couder advises the mother to *waken the child every hour till two o'clock in the morning*. With this practice, the attacks of false croup may not recur.

The frequent wakening of the child in the first part of the night was suggested by the fact that *nurslings never suffer from false croup*. If they have cold, their sleep is broken, and when they waken they are given the breast or the bottle.

It is necessary to thoroughly waken the child, to make him sit up, and to cause him to swallow a few mouthfuls of warm fluid. As a rule, the interval of one hour between the awakenings suffices, but not always. One ought to be guided by the respiratory embarrassment; so soon as the respiration becomes whistling and the child restless, it should be wakened.

The explanation of this method of practice would appear to be very simple. During the first two days of a catarrh, the mucous membrane of the subglottic region of the larynx is the seat of a tumefaction which obstructs the passage of air. Moreover, at this early period, the secretion is slight in amount, and but little viscid and adherent. During the day, the movements of deglutition and coughing displace this mucus; but during the first sleep the passage of the respiratory air dries the secretions and transforms them into a kind of membranous formation, similar to the crusts which are formed at the nasal orifices in coryza. At a given moment, these muco-membranes embarrass or even completely obstruct the passage of air, and suffocation suddenly occurs.

If, on the contrary, the child be wakened before these products are accumulated and hardened, if we compel him to drink, if he cries in consequence of the discomfort he experiences, the result is the displacement of the mucus and the suppression of the obstacle in process of formation.—J. W. F.

## GYNÆCOLOGY AND OBSTETRICS.

By E. H. LAWRENCE OLIPHANT, M.D.

**Accidental Hæmorrhage.**—There is a full report in the *Dublin Journ. Med. Sciences* (January, 1905) of the paper on this subject by Sir Arthur V. Macan. This interesting paper is so full of material that it does not lend itself to abstraction. In general terms, we may say that he adheres to the "Dublin treatment" of plugging the vagina and of supporting this below with a perineal bandage, and at the same time obtaining counter-pressure by an abdominal bandage over the uterus. He considers this an efficient method of treating all cases of accidental hæmorrhage except the most violent ones, and perhaps even these. He mentions the causes of this accident, such as hæmophilia and scurvy, diseases of the blood or of the blood-vessels, and failures in the mechanism of labour, such as the mounting too high of the contraction ring in difficult labour, thus diminishing the size of the placental site. He then discusses the mechanism of the accidental hæmorrhage, and begins by laying down certain postulates—that the healthy uterus cannot be distended to any considerable extent by the force of the blood-pressure; that the placenta has great power of accommodating itself to changes in the size of its site; that the placenta is not so easily separated as the membranes, and that they are both equally separable over their entire area; that the hæmorrhage, in spreading, will follow the line of least resistance; that the effect of gravity, and of the peristaltic action of the uterus, need not be considered. After enumerating the chief features in the mechanism of the various forms, he goes on to show that rupture of the membranes must always be to lessen intra-uterine tension and so increase the hæmorrhage, and also to show that uterine contractions cannot be looked on as stopping hæmorrhage during the intervals. For it is the retraction, not the contraction, which arrests hæmorrhage in the intervals, and we cannot have sufficient retraction to stop hæmorrhage so long as the fetus is *in utero*. In many cases, the hæmorrhage comes on during labour, and continues in spite of the uterine contractions; also, contractions directly cause accidental hæmorrhage in some cases—as when the contraction ring is so high as to diminish the placental site; when there is delay in the birth of the after-coming head; in cases of neglected shoulder presentation; after the birth of the first of twins or the escape of excessive liquor amnii. During a contraction, the hæmorrhage is arrested by the blood-supply to the uterus being cut off and by the increase in intra-uterine tension. The only way in which the contraction can stop the hæmorrhage is by thus giving time for thrombi to form during the contraction. In regard to diagnosis, he warns that the chief point to be made out is the amount of the internal hæmorrhage, especially in the combined form. The indications for treatment are laid down as follows:—(1) To arrest the hæmorrhage without emptying the uterus; or, if this is not possible, (2) to empty the uterus before the patient succumbs to the hæmorrhage in whatever way is least likely to cause rupture of the soft parts, with the consequent post-partum hæmorrhage and shock; (3) to treat any post-partum hæmorrhage that may arise, and to combat the anæmia. The chief means of arresting the hæmorrhage is by increasing the intra-uterine pressure, and this is best obtained by plugging and bandaging, as mentioned at the outset. This method also assists by promoting the formation of thrombi. Plugging has been opposed by various members of the London school, but has been used by four successive masters of the Rotunda. As the object of the Rotunda method is to allow of a natural delivery, the membranes must not be ruptured until as late as possible. Great judgment is required on this point.

To fulfil the second indication, the cases must be divided into two classes—those where the os is dilated, and those where it is not. The question of dilating the os is often unanswerable in respect to the ignorance of the time at our disposal for dilating. If we are too slow, the patient may die of the hæmorrhage; if we are too quick, the patient may die of the injuries we inflict. To avoid this dilemma, Sir Arthur Macan prefers the Cæsarean section, and, according to the Continental teaching, the vaginal operation. The paper is summed up in a series of twenty-eight conclusions, of which those of the most direct practical importance are these:—

All accidental hæmorrhage commences as internal hæmorrhage, and, if slight, may not be recognised till after delivery.

A large proportion of cases of so-called accidental hæmorrhage is due to low insertion of the placenta, and this is not likely to cause internal hæmorrhage. Rupture of the circular sinus gives rise to symptoms similar to those of accidental hæmorrhage.

In the most cases where the cervix is long and os rigid, it is (probably?) necessary to deliver the woman immediately, and this is better done by either abdominal or vaginal Cæsarean section than by *accouchement forcé*. Less severe cases with the os rigid and cervix long are best treated by plugging.

Rupture of the membranes makes it more difficult to increase the intra-uterine tension by plugging the vagina, and is accordingly not good treatment unless it causes rapid expulsion of the child. But rupture of the membranes is good treatment in cases where the hæmorrhage is caused by a persistence of the bag of waters far into the second stage, and similarly in cases of hæmorrhage from a low insertion of the placenta. As we do not know how much time is at our disposal to completely dilate a partially dilated cervix, plugging is an efficient way in accidental hæmorrhage, perhaps even in the worst cases. Recurrent hæmorrhage is a more urgent symptom than hæmorrhage appearing for the first time.

#### Diagnosis of Rupture of the Circular Sinus During Labour.

—Dr. Maygrier communicates six cases of this condition to *L'Obstétrique*, November, 1904, and draws attention to the diagnostic signs. The flow of blood begins with the onset of a uterine contraction, ceases during the continuance of the pain, and recurs as the contraction passes off. The same phenomena are visible at each uterine pain, so that the total quantity of blood lost is sometimes very considerable, and may cause one to terminate the labour by application of forceps. In one of the author's cases, the hæmorrhage persisted for forty-five minutes. Dr. Maygrier is of opinion that these characters distinguish this form of hæmorrhage from those due to premature separation of a normally inserted and of a low placenta.

**Calcium Chloride in Hæmorrhage.**—Dr. Reeve contributes a note on this drug to *American Gynecology*, April, 1903, and draws attention to the neglect of this means of treating hæmorrhage, in spite of the reports by Mayo Robson and others. He records a case admitted to hospital on account of severe uterine hæmorrhage, for which calcium chloride was prescribed, as operation at the time was impossible. Several hours later, the author was summoned in haste by the house surgeon, who thought the woman was suffering from inversion of the uterus. On his arrival, Dr. Reeve found a firm pear-shaped body protruding seven inches from the vulva, with blood trickling over its surface. The tumour was found to consist of concentric layers of blood-clot, which had grown like a stalactite. The author concludes that this is evidence of the efficacy of the drug in raising the coagulability of the blood.

**Torsion of the Pedicle of an Ovarian Cyst in a Child 15 Years Old.**—Dr. Erdmann reports this interesting case in the *New York Med. Journ.*, 17th December, 1904. The author was called to see a case of supposed appendicitis, in which diagnosis he was disposed to concur. Six

days previously, the little patient had been attacked by pain generalised over the left side, and at no time distinctly in the region of the appendix; there was also almost daily vomiting. On palpation, tenderness was found all over the hypogastrium, with muscular rigidity, both most marked over the appendix. The abdomen was not markedly distended. At the operation, the case was found to be one of an ovarian cyst which had become dark blue in colour, and, on account of its gangrenous condition, was at first taken for a dislocated and strangulated spleen. It was easily removed along with the appendix, which was in a bad state of congestion. The abdomen was washed out with saline solution, and was closed without a drain. The patient made a rapid and complete recovery.

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## PUBLIC HEALTH AND INFECTIOUS DISEASE.

By JOHN BROWNLEE, M.A., M.D.GLASG., D.P.H.CAMB.

**Life Table for Scotland based on the Census Enumerations of 1881-1901, and the Recorded Deaths for the Decennium 1891-1900.** By T. Adam, M.R.C.S., L.R.C.P., D.P.H. (*Journal of the Royal Statistical Society*, 1904, part iii).—This life table is of considerable importance as being the first which has been calculated for Scotland according to the method which is now commonly employed. In this method the period for which the table is calculated is that between two census enumerations, so that, the population at different ages being accurately known for the beginning and the end of the period, the average number of lives at risk at each age is very approximately known. The number of deaths used for comparison is the total number occurring during the ten years, a period of sufficient length to give epidemic influences or single specially healthy years no more influence than that to which they are probably entitled. The interpolation has been carried out by the graphical method employed by Dr. Newsholme, while the lower and higher ages have been treated by the special methods now commonly employed.

The first fact which stands out prominently is the much greater prospect of surviving during the first year of life which a child has in Scotland over one in England. This applies not only to Scotland compared with England as a whole, but even when the comparison is made with such a healthy town as Brighton. The effect of this is seen in the fact that out of a definite number of males or females born there is found to be a greater number of survivors at all ages in Scotland than in England. As the greatest saving of life occurs during the first year of life in the former, and as after 35 years among the males the excess has become slight, it follows that the chance of living one year at higher ages must be greater in England, and it is accordingly found that at all ages between 10 and 55 years the probability of living one year is slightly higher for males in England than in Scotland. Much the same result holds for females, but among the latter in England above the age of 35 years the number of survivors is considerably in excess of that in Scotland.

While the probability of living one year is the only number by which the health of one community at each age period can be compared with that of another, yet the number known as the expectation of life, or the mean after-lifetime, is that which is most easily understood, and the tables of this number for different places given here from Dr. Adam's life table show that for males at birth the advantage is with Scotland; from the age of 5 to the age of 25 years, with England; while thereafter the advantage is regained by the former. At all ages, as is to be expected, it is better than that of London, but likewise inferior to that of Brighton. With regard to females, however, the relationship is not quite the same, though as regards Scotland and England as a whole

the relationship described for males approximately holds for females, yet the expectation of female life in London compares much more favourably with that of Scotland than does the expectation of male life; and the same is true with relation to Brighton.

Town life does not seem, therefore, in these places to have the same depressing effect on the female as on the male, while it may be noticed for comparison that the opposite is the case in Glasgow until the age of 35 is reached.

#### EXPECTATION OF LIFE, OR MEAN AFTER-LIFETIME.

MALES.					
Age.	Scotland. 1891-1900.	England and Wales. 1891-1900.	London. 1891-1900.	Brighton. 1891-1900.	Glasgow. 1881-1890.
0 . .	44·71	44·17	40·98	44·92	35·18
5 . .	52·36	53·50	51·60	53·94	46·97
10 . .	48·60	49·60	47·54	49·80	44·32
15 . .	44·34	45·18	43·40	45·29	40·51
20 . .	40·43	41·01	39·13	41·09	36·90
25 . .	36·75	36·97	34·96	37·12	33·29
35 . .	29·30	29·22	27·25	29·45	26·06
45 . .	22·24	22·15	20·65	22·54	19·54
55 . .	15·85	15·78	14·76	16·44	13·99
65 . .	10·57	10·30	9·76	11·01	9·38
75 . .	6·38	6·13	5·91	6·44	5·96
85 . .	3·38	3·49	3·48	3·01	3·75
FEMALES.					
0 . .	47·47	47·82	45·33	50·19	37·70
5 . .	54·02	55·82	55·12	58·52	48·27
10 . .	50·39	51·97	51·49	54·53	45·44
15 . .	46·26	47·59	47·10	50·21	41·59
20 . .	42·41	43·44	42·77	45·82	38·00
25 . .	38·63	39·38	38·46	41·42	34·60
35 . .	31·37	31·53	30·42	33·06	28·06
45 . .	24·27	24·16	23·29	25·42	21·61
55 . .	17·42	17·26	16·72	18·41	15·60
65 . .	11·60	11·26	11·01	11·98	10·69
75 . .	7·05	6·70	6·57	6·91	6·97
85 . .	3·75	3·79	3·79	3·36	4·32

Dr. Adam also gives two diagrams showing the comparison between his life table and the only former one for Scotland, namely, that of Dr. W. Robertson, based on the census enumerations of 1871 and on the deaths for that year alone. This comparison shows that the chances of life have considerably improved, especially at lower ages. Though important, however, too much emphasis cannot be laid upon this, as the calculations are based on the number of deaths in a single year.

Dr. Adam must be congratulated on the successful carrying through of a very important piece of work.

*Books, Pamphlets, &c., Received.*

- The Radical Cure of Corns and Bunions**, by E. Harding Freeland, F.R.C.S. Second Edition. London: John Bale, Sons & Danielsson, Limited. 1905. (1s.)
- Recurrent Effusion into the Knee-Joint after Injury, with especial Reference to Internal Derangement**, by Sir William Bennett, K.C.V.O., F.R.C.S. With 11 Illustrations. London: Longmans, Green & Co. 1905. (3s. 6d.)
- Abdominal Pain: Its Causes and Clinical Significance**, by A. Ernest Maylard, M.B., B.S.Lond. London: J. & A. Churchill. 1905. (7s. 6d. net.)
- An Atlas of Dermatology**, by Morgan Dockrell, M.D. London: Longmans, Green & Co. 1905. (50s. net.)
- Medical Philology**, gathered by L. M. Griffiths, M.R.C.S.E. Part I. Bristol: J. W. Arrowsmith. 1905.
- Errors of Refraction and their Treatment**, by C. Blair, M.D. Bristol: John Wright & Co. 1905. (2s. 6d. net.)
- The Principles and Practice of Asepsis**, by A. S. Vallack, M.B. London: Baillière, Tindall & Cox. 1905. (2s. 6d. net.)
- The Effects of Tropical Light on White Men**, by Major C. E. Woodruff, M.D. London: Rebman, Limited. 1905. (10s 6d. net.)
- Transactions of the American Surgical Association**. Vol. XXII. Edited by R. H. Harte, M.D. Philadelphia: W. J. Dornan. 1904.
- The Sanitary Inspector's Handbook**, by A. Taylor. Fourth Edition. London: H. K. Lewis. 1905. (6s.)
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- Transactions of the Twenty-Sixth Annual Meeting of the American Laryngological Association**. New York: Printed by the Association. 1904.
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- Surface Anatomy**, by T. G. Moorhead, M.D. London: Baillière, Tindall & Cox. 1905. (4s. 6d. net.)
- Clinical Lectures on Appendicitis, Radical Cure of Inguinal Hernia, and Perforating Gastric Ulcer**, by G. R. Turner, F.R.C.S. London: Baillière, Tindall & Cox. 1905. (5s. net.)
- The Conjunctiva in Health and Disease**, by N. B. Harman, M.B. London: Baillière, Tindall & Cox. 1905. (10s. 6d.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FIVE WEEKS ENDING 25TH MARCH, 1905.**

	WEEK ENDING				
	Feb. 25.	Mar. 4.	Mar. 11.	Mar. 18.	Mar. 25.
Mean temperature, . . .	36·7°	41·3°	41·8°	44·3°	46·2°
Mean range of temperature between day and night, . .	18·0°	18·7°	17·8°	18·0°	28·8°
Number of days on which rain fell, . . . . .	3	6	7	6	4
Amount of rainfall, . ins.	0·49	0·53	0·92	1·03	0·61
Deaths registered, . . .	276	284	276	298	267
Death-rates, . . . . .	17·8	18·3	17·8	19·2	17·2
Zymotic death-rates, . . .	1·7	1·9	1·9	1·7	1·6
Pulmonary death-rates, . .	4·7	5·8	5·9	6·8	5·4
DEATHS—					
Under 1 year, . . . . .	53	65	57	65	57
60 years and upwards, . .	51	68	58	70	62
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles, . . . . .	4	5	6	7	3
Scarlet fever, . . . . .	2	1	1	...	1
Diphtheria, . . . . .	...	2	1	2	4
Whooping-cough, . . . .	16	18	22	13	16
Fever, . . . . .	4	1	...	1	...
Diarrhoea, . . . . .	5	8	10	5	5
Croup and laryngitis, . .	1	...	1	2	...
Bronchitis, pneumonia, and pleurisy, . . . . .	53	59	71	76	61
CASES REPORTED—					
Small-pox, . . . . .	2	...	...	...	...
Diphtheria and membranous croup, . . . . .	15	13	14	11	10
Erysipelas, . . . . .	23	23	20	15	27
Scarlet fever, . . . . .	19	18	15	29	21
Typhus fever, . . . . .	3	...	...	...	...
Enteric fever, . . . . .	10	4	6	10	6
Continued fever, . . . .	...	...	...	...	...
Puerperal fever, . . . .	1	1	4	2	1
Measles,* . . . . .	138	118	141	195	235

\* Measles not notifiable.

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ORIGINAL ARTICLES.

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ACUTE FATAL PNEUMOCOCCIC PLEURISY, RESEMBLING CLINICALLY ACUTE LOBAR PNEUMONIA, WITH REMARKS UPON THE RELATIONSHIP OF PNEUMONIA TO THE PNEUMOCOCCUS.<sup>1</sup>

By JOHN LINDSAY STEVEN, M.D., F.F.P.S.G.

THE essential nature of acute lobar pneumonia and its etiological relationship to the pneumococcus are still subjects for investigation and study. That pneumonia is a general rather than a local disease is now very widely admitted. As Dr. Gee has stated in his *Medical Lectures and Aphorisms*, "Pneumonia is not a local, but a universal disease; and the brunt of it may fall upon any part." Admitting, however, that lobar pneumonia is a general disease, we have still to settle these two points—(1) Whether, having regard to its clinical course and its relationship to the pneumococcus, it should be classed among the acute specific fevers; or (2) whether it is merely to be regarded as a general disease, "the brunt of which may fall upon any part" in the same sense as we consider pyæmia, septicæmia, or severe local inflammation accompanied by serious constitutional disturbance and pyrexia

<sup>1</sup> Read before a meeting of the Glasgow Medico-Chirurgical Society held on 4th November, 1904.



as general diseases. There is a very clear pathological distinction between the two views. The phrase "pneumococcic infection" is one that has come into very general use since the discovery of Fraenkel's pneumococcus, and in all discussions on the essential nature of acute lobar pneumonia the morbid conditions connoted by this phrase have to be reckoned with. Although, as the result of much reflection and careful tabulation of my whole series of hospital cases of lobar pneumonia for a period of eight years, I have arrived at the opinion that the disease is a specific fever in the sense that scarlatina, typhus, or enteric is, yet I am quite willing to admit that there is room for the opposite view, and that positive demonstration of the accuracy of my own opinion is perhaps not yet possible.

The record, therefore, of a case of acute pneumococcic pleurisy, which I had the opportunity of seeing with my friend Dr. W. F. Gibb, of Paisley, is of importance from the bearing it has upon the settlement of the question of the nature of acute lobar pneumonia. The occurrence of acute and rapidly fatal pneumococcic pleurisy, presenting in almost every detail the characteristic clinical features of severe acute pneumonia, is certainly not novel, but it must be admitted to be comparatively rare. Interesting accounts of this somewhat rare form of acute pleurisy have been written by Dr. Washbourn and by Dr. Kingston Fowler. Dr. Washbourn in 1894 published a paper entitled, "Cases of Pleurisy caused by the Pneumococcus, and with Constitutional Symptoms Resembling those of Pneumonia."<sup>1</sup> Three cases were recorded, of which the second resembled most closely that which I am about to describe, but none of them were quite similar. Some of his conclusions, however, are well deserving of notice in the present argument. "The fact that the pneumococcus when invading the pleura produces the same constitutional symptoms as if the lung itself were involved has, however, not been sufficiently emphasised." Again, he writes—"The constitutional symptoms were, doubtless, caused in the same way as in pneumonia, i.e., by the absorption of the toxins produced by the pneumococcus." The following sentence is also important:—"The author is thus led to believe that many cases which are diagnosed as pneumonia, but in which the physical signs are not typical, are really cases of invasion of the pleura by the pneumococcus." Following upon this, he advises exploration of the chest, as was done by Dr. Gibb in our case, in acute pneumonia with

<sup>1</sup> *Med. Chir. Trans.*, London, 1894, vol. lxxvii, p. 179.

equivocal signs. Dr. Kingston Fowler agrees with the conclusions of Dr. Washbourn, and writes that "our experience confirms this statement, as we have observed many cases diagnosed as pneumonia, and presenting the general symptoms of that disease, in which *post-mortem* there was acute inflammation of the pleura without any true 'pneumonic consolidation of the lung.'"<sup>1</sup> I cannot say that my experience in the least agrees with that of Dr. Kingston Fowler, and the occurrence of a case such as that now to be described is in my practice unique. Occurring, as it did, in private, there was no *post-mortem* examination, and had it not been that Dr. Gibb explored and removed over a pint of yellow serous fluid in which the characteristic pneumococci shown to-night were found, the final diagnosis would have been acute lobar pneumonia of severe and rapidly fatal type.

Before relating the case, however, I must make one or two further remarks on the subject of pneumococcic infection. It is now well established that Fraenkel's organism can be recovered from the blood and spleen in very many cases of acute lobar pneumonia; at least this has been the experience in the Bacteriological Laboratory of the Glasgow Royal Infirmary. Dr. Cole, in the Johns Hopkins Hospital, Baltimore, recovered the organism from the blood in 30 per cent of the cases he examined, and he quotes other observers who found it in from 25 to 28 per cent of the cases. According to Cole, the presence of the organism in the blood increases the danger; in all his own cases, except one which was an example of pneumococcic septicæmia,<sup>2</sup> lobar pneumonia was the disease present. In this connection, also, reference must be made to a paper by Drs. Davies and Langdon Brown on pneumococcic pyæmia, in which a case is described where multiple pyæmic lesions were caused by pneumococcal<sup>3</sup> infection secondary to broncho-pneumonia.

Such observations would seem to indicate that acute lobar pneumonia in its ultimate nature is "usually a septicæmia," which may occasionally lead to a pyæmia. There can be no doubt that this is a view which will recommend itself to many minds. All the same, I think the last word has not been said upon the bacteriological nature of lobar pneumonia, and I am still inclined to regard the disease as an acute specific fever

<sup>1</sup> *The Diseases of the Lungs*, London, 1898, p. 201.

<sup>2</sup> "Blood Cultures in Pneumonia," by Rufus J. Cole, M.D., *Johns Hopkins Bulletin*, June, 1902, No. 135, pp. 136-139.

<sup>3</sup> "A Case of Pneumococcic Pyæmia, with Recovery," *The Lancet*, 8th October, 1904, p. 1017.

with a local lesion, which, as sometimes happens in enteric fever, may occasionally not be developed.

I was asked by Dr. W. F. Gibb to see the patient, whose case forms the text of this short paper, on the 18th September, 1904, the day on which he died, and the sixth day of his illness. He was a young man, aged 27, by profession a chartered accountant. The best idea of the case, as it presented itself at the time of my visit, will be obtained if I simply transcribe the short note I made in my case-book on getting home, and afterwards read to you the clinical history which Dr. Gibb subsequently kindly sent me. A case of extremely acute pulmonary disease of the right side, at the sixth day, from which Dr. Gibb removed, by tapping, this morning about a pint of opaque yellow (very doubtfully purulent) serum. At the time of visit, 5.15 P.M., apparently *in extremis*; great delirious restlessness; constant moaning; marked lividity and pallor of the face; forehead and hands wet with cold sweat; body bathed in hot sweat. Temperature (rectal), 106.8° F., had been 105° F. earlier in the afternoon; pulse, 150, small, weak, irregular, and difficult to count; respirations, 50. Pericardial friction well marked over right ventricle; dulness at right base behind; slight pleural friction in right inflammatory region; prognosis very grave. The clinical history is that of acute fulminating lobar pneumonia; the physical signs, as proved by the tapping, are those of acute pleurisy with effusion; the physiognomy is, perhaps, that of both.

*Treatment.*—Brandy, 2 drs. every two hours: fluid food, frequently; strychnine ( $\frac{1}{30}$ ), digitalin ( $\frac{1}{100}$ ), hypodermically every four hours; oxygen.

*Clinical history by Dr. Wm. F. Gibb.*—"The patient was a strong young man of 27, fond of outdoor sport, and leading an active, healthy life. I saw him first on the evening of 13th September, 1904, on account of severe pain in the right side, and was informed that he had been feeling slightly out of sorts for two days. The pain had come on a few hours previously to my visit, and was felt over the right lower ribs; there was slight dry cough, and the temperature was 102° F.

"On 14th September the pain continued to be severe, and had extended to the angle of the scapula behind and to the fourth rib in front. The respiratory murmur was tubular over the whole of the right lower lobe. The percussion note was deficient in resonance behind. There was frequent dry

cough, and the patient was often restless. Temperature, 101° to 102.5° F. He took liquid nourishment freely.

"The symptoms continued till 17th September without any marked change, excepting that dulness became more distinct behind. The pulse continued about 100, strong and regular; the respirations about 30 to 35; and the temperature, 101° to 103° F. Pain was less complained of, and nourishment, chiefly milk, was taken in good quantity. Suspecting that a somewhat rapid pleural effusion was taking place, I arranged to explore for it the next morning, 18th September. On arriving at 10.30 A.M., I found him in a most grave condition, which the nurse reported showed itself first about 4 A.M. His pulse was almost gone at the wrist, and numbered about 140; the respirations, 50; he was quite unconscious, but the conjunctivæ were sensitive; he was restless, and at times wildly excited; temperature, 104.5°.

"I drew off by siphonage a little over a pint of turbid serous fluid from the right pleural cavity. Auscultation over the cardia revealed well-marked pericardial friction sounds. He became weaker; refused nourishment; temperature ran up to 107° F. (rectal) at 5.30 P.M.; and he died at 7.30 P.M."

Such is the history of the case. The patient died on the sixth day of the disease, not of the pleurisy, but of the accompanying toxæmia, which was very profound. While driving to the patient's house, Dr. Gibb, without mentioning the pleural effusion, related the clinical history to me, and I at once remarked that it seemed to be a fairly characteristic account of acute lobar pneumonia. He then informed me that a few hours before our meeting he had removed a pint of fluid by paracentesis thoracis, and I was bound to admit that I had never before met with a similar case. I have seen, and tapped early in the disease, many cases of acute pleurisy with effusion, and I have sent numerous cases of empyema, some of them following acute lobar pneumonia, to my surgical colleague, Mr. J. Hogarth Pringle, but I have never seen an acute, rapidly fatal acute, effusive pleurisy of this kind before. As I have said, there was no *post-mortem* examination, and, therefore, there may have been a pneumonic consolidation of the lung as well. This, however, cannot be settled now, and to this extent, perhaps, the case is incomplete. Acute pleurisy accompanies every case of acute lobar pneumonia, but the effusion is not fluid and is limited, as a rule, to a thin layer of fibrinous exudation on the surface of the lung and between its lobes. I have had a somewhat extensive

experience of *post-mortem* examinations in cases of acute lobar pneumonia, and I have never seen a lobar hepatisation or splenisation associated with an extensive and coincident serous effusion into the pleural cavity. The present case is a new one in my experience, and for me it goes to prove (1) that an acute rapidly fatal pleurisy with effusion, originating spontaneously or idiopathically, may run a clinical course not to be distinguished from that of a severe acute lobar pneumonia; and (2) that the virulence of Fraenkel's pneumococcus may occasionally expend itself upon the pleura rather than upon the parenchyma of the lung itself.

In conclusion, I have to express my thanks to Dr. M'Crorie, bacteriologist to the Glasgow Royal Infirmary, who demonstrated Fraenkel's organism in the pleural exudate both directly and by culture. One of his films I have shown to-night.

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### CASE OF CEREBRO-SPINAL MENINGITIS FOLLOWING SCARLET FEVER.

By IVY M'KENZIE, M.A., B.Sc., M.B., CH.B.,  
Resident Assistant Physician, Ruchill Fever Hospital.

THE acute specific diseases constitute one of the most important factors in the etiology of cerebro-spinal meningitis.

In both croupous and catarrhal pneumonia the symptoms of meningeal inflammation are not infrequent, and although in several of these cases the *post-mortem* evidence is not conclusive, yet in some a purulent inflammation of the meninges is present, and pneumococci have been isolated. In Hoffmann's 1,051 cases of pneumonia there were 10 cases complicated by meningitis, 7 of whom died, the *post-mortem* examination showing a purulent affection of the cerebro-spinal membranes; he believes meningitis to be more common in those cases in which there occurs a purulent resolution of the pneumonic exudate.

In enteric fever meningitis may supervene as the result of a mixed infection of cocci; but cases have been reported by Hoffmann, Olmacher, and Quincke, from which pure cultures of the Eberth bacillus were obtained.

Measles may be followed by a meningitis of tubercular or pneumococcal origin, in the latter case there is usually a concomitant broncho-pneumonia.

In scarlet fever, on the other hand, cerebro-spinal meningitis is a rare complication, so rare that Henoch remarks that he is unable to say anything in regard to it from personal experience; while Leichtenstern saw only one case in the great Cologne epidemic.

The following case occurred as a sequel to a scarlatinal infection:—

Robert P., æt. 6 years, was admitted to the Ruchill Fever Hospital on 28th December, 1904.

*Present illness.*—His illness began suddenly on 24th December with headache, sickness, and vomiting; his skin was hot, and he complained of sore throat. On 25th December a bright red rash was noticed on his chest and arms, his throat was more painful than on previous day, and he vomited twice. On 26th December the rash had spread over the trunk and limbs, and the throat was still painful. On 28th December he was removed to the hospital.

*Previous health.*—He had always been a delicate child, suffering from "colds" and from occasional "swellings in the neck." There is no history of previous infective disease, and no evidence of tubercle.

*Family history.*—His father and mother are alive and well. There is no evidence of constitutional disease in the family history. He was an only child.

*Social history.*—He lived with his father and mother in a well-lit and well-ventilated room and kitchen. He was always warmly clad and well fed.

*Condition on admission* (28th December, 1904).—Patient is fairly well nourished and developed, and lies comfortably in any decubitus. His face is somewhat pale. There is a faint rash of scarlatiniform type on the lower limbs, and to a less extent on the extensor surface of the upper limbs. The temperature is 100·4°. The tongue is slightly congested, and on the dorsum is coated with a thin white fur, pierced by the prominent papillæ; at the tip and edges it is denuded of epithelium. The throat is generally congested, more particularly in the region of the fauces and tonsils, the tonsils being distinctly enlarged. There is no exudate or ulceration in the throat. The submaxillary glands are easily palpated, though not tender. The chest is well shaped and moves freely and equally on respiration, and presents nothing abnormal on physical examination. The respirations number 24 per minute, and the pulse, which is regular in force and rhythm and of good tension, numbers 120 per minute. The urine is

amber-coloured and acid in reaction, has a specific gravity of 1020, and contains neither albumen, blood, nor sugar. The pupils are equal and moderately dilated, and react to light and in accommodation. The deep and superficial reflexes are easily elicited.

*11th January, 1905.*—Patient has been under observation for a fortnight, and the progress has been satisfactory. His temperature fell to normal on the evening of the day following admission, and has since then remained within normal limits. His tongue and throat are clean and normal in appearance, and he is taking his food well. His urine is normal. The process of desquamation is going on normally on the neck, hands, and feet.

*29th January.*—A month has elapsed since admission, and the convalescence has not been disturbed by any complication. The heart, lungs, and kidneys present no evidence of disease, and he is taking his food well. The skin is still ragged on the hands and feet. He was allowed up to-day.

*2nd February.*—Patient was up and going about for four days. Last night he complained of sore throat, and his temperature was  $100^{\circ}$ , and his pulse 120. This morning his temperature is  $102.4^{\circ}$ , and the pulse, which has a bounding quality, numbers 138. The face is flushed. His tongue is slightly furred, and the tonsils are swollen and cedematous, but show no evidence of membranes, exudate, or ulceration. The heart, lungs, and urine, are normal.

*3rd February.*—Patient passed a very restless night, sleeping only at short intervals, and on three occasions he was sick and vomited. This morning the skin is dry and hot, and on the chest and limbs there is a faint erythematous rash. The tongue is coated with a brown fur; the throat is markedly congested, the tonsils and faucial pillars being cedematous; the glands in the neck are indurated and tender. He complains of thirst and headache. His temperature is  $102.8^{\circ}$ , and pulse 132 per minute. A swab taken from the throat yesterday showed the presence of short-chained streptococci. A growth was obtained on agar which, when examined microscopically, was also found to consist for the most part of short chains of cocci.

*4th February.*—There is no marked change in his condition to-day. The temperature has been ranging between  $102^{\circ}$  and  $103^{\circ}$ , and the pulse between 134 and 136 per minute. He vomited twice during the night. The throat to-day is very painful and cedematous, and shows a quantity of white exudation. There is a small ulcer on the right tonsil.

5th February.—Patient has had a fairly good night. This morning the temperature is  $101.6^{\circ}$ , and the pulse 126. The

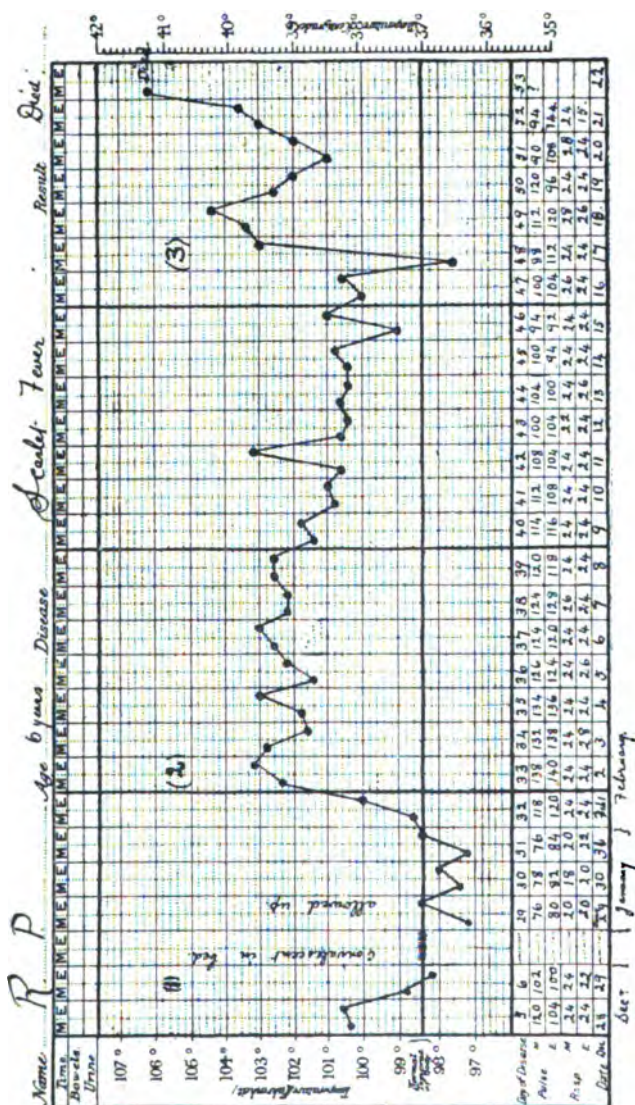


Chart showing (1) defervescence of temperature of scarlet fever; (2) rise and gradual decline of temperature due to streptococcal throat infection; and (3) rise of temperature accompanying meningitis. The temperature during convalescent period preceding complication is omitted.

throat is seen very much congested, and exudation is profuse and purulent; the ulcer on the right tonsil is about a quarter



of an inch in diameter. He complains of pain in the right ear, but nothing can be made out on examining the organ, and there is no tenderness of the mastoid process. The glands in the neck are swollen and somewhat tender. A rash of a somewhat mottled appearance is present in front of the legs and feet. The red spots are about the size of a lentil, and distinctly raised above the surface of the skin; they disappear when the skin is stretched.

*6th February.*—He has had a good night, and seems brighter this morning. The temperature is  $102.6^{\circ}$ , and the pulse 124. The throat is not quite so dirty. Earache is still present, and the tympanic membrane is red. The glandular swelling in the right side of the neck has increased. The urine is normal. He is taking his nourishment well, and there has been no sickness for two days.

*7th February.*—This morning the right ear is discharging, and the earache has gone. The temperature is  $102^{\circ}$ , and the pulse 124. The throat is cleaner, but the swelling on the right side of the neck has increased.

*9th February.*—Patient's general condition has not changed much since last note. Both ears are now discharging freely. The swelling in the neck is somewhat less, and the throat, though still congested, shows less exudation. He complains of pains in the upper and lower limbs, and there is some tenderness about the joints, but no redness or swelling. The temperature is  $101.4^{\circ}$ , and the pulse 114. He is taking his nourishment well.

*12th February.*—There seems to be gradual improvement in his condition. The temperature is slowly declining, and has this evening fallen to  $100.4^{\circ}$ , while the pulse is 104 and of good quality. The throat has improved greatly, although there is still some swelling and ulceration of the right tonsil. The glandular swelling in the neck has subsided to a great extent, and there are now no pains in the joints.

*15th February.*—His condition continues satisfactory. The temperature has this morning fallen to  $99^{\circ}$ , and the pulse, which is regular and of good quality, numbers 94. The throat is improving, and he makes no complaint of pain, and is taking his nourishment well.

*18th February.*—Yesterday morning patient's temperature was  $97.6^{\circ}$ , and his pulse 88, regular, and of good quality. He appeared and felt very well. In the evening he complained of headache, was sick and vomited, and his temperature was found to be  $103^{\circ}$ , and the pulse 112. He has been very restless during the night. This morning the face is flushed, and

the skin dry and hot. He complains of severe headache and of pains in back and limbs. The skin over the back and limbs is sensitive, and the tenderness is not related to the joint regions. The heart, lungs, and urine are normal.

*19th February.*—He has not slept during the night. Headache, vomiting, and retching have been persistent, and last night the temperature reached  $104.2^{\circ}$ . This morning there is slight retraction of the neck, and the spinous processes are tender on pressure. The skin on the limbs is sensitive, and great pain is elicited on pressing over the larger nerve trunks. The superficial and deep reflexes are active. The pupils are equal and moderately dilated, and react to light and in accommodation. Examination of the fundus reveals nothing abnormal. The pulse is regular and strong, but varies in rate from time to time between 96 and 120 per minute. The tongue is dry and coated slightly with a brown fur; owing to persistent vomiting, he is fed rectally.

*20th February.*—There is no improvement in his condition. The temperature is still high, and the pulse though strong is now intermittent and varies in rapidity. Vomiting is persistent, retraction of the neck is marked, and Kernig's sign is present. The headache and pains in the back and limbs have somewhat disappeared under the influence of morphia. The most marked feature of his condition is extreme restlessness; he lies now on his right side and now on his left, and tosses from one side of the bed to the other. Fluid taken from the arachnoid space by lumbar puncture is lazy in appearance, and microscopically shows the presence of short-chained streptococci and a few pus cells. There has been marked loss of flesh during the past three days.

*21st February.*—To-day he is much weaker. The temperature this evening is  $103.6^{\circ}$ , and the pulse is 144 and very weak. The respirations are of the Cheyne-Stokes type. The face is flushed, and there is circumoral pallor. He lies quietly, and seems to suffer little. The tendon reflexes cannot be elicited. The pupils are unequal, the right being dilated and fixed. Examination of the fundus shows dilatation of the veins, and a marked haziness in the outline of the disc.

Died 22nd February.

*Summary of clinical history.*—When patient came under observation he was recovering from the symptoms incident to a scarlatinal infection. After a month's undisturbed convalescence, during which period desquamation was fairly profuse and typical, he was allowed up. On the third day after

getting up he was seized with headache, sore throat, and fever, accompanied later by an erythematous scarlatiniform rash, and later still by a septic rash. The throat infection was severe, and characterised by great œdema and tonsillar ulceration, and in the swab there were found abundance of short-chained streptococci; associated with the throat condition there was cervical adenitis, double otorrhœa, and joint pains. At the end of a fortnight the temperature had begun to settle, and there was such an amelioration of his condition as to justify a hopeful prognosis. The temporary improvement was immediately followed by symptoms pointing to a cerebro-spinal complication, and suspicion was confirmed by examination of the cerebro-spinal fluid.

*Post-mortem examination.*—The examination was performed thirty-two hours after death. The body is greatly emaciated, muscles having atrophied, and subcutaneous fat having disappeared.

*Head.*—The calvarium is normal. The dura is markedly adherent to the skull in the region of the occiput, but is otherwise normal on the convexity of the brain. There is flattening of the central convolutions, milky opacity of the pia arachnoid, and dilatation of the veins. At the base there is a dense purulent infiltration of the pia arachnoid, most marked in the region of the optic chiasma, and extending along the optic and olfactory nerves, and to a less extent covering the cerebellum and implicating the roots of the other cranial nerves. The inflammatory mass is easily stripped from the brain, which is œdematous, and shows congestion of the small vessels in its substance. The lateral ventricles are distended, and contain a quantity of clear fluid, while a large quantity of hazy fluid flows from the spinal canal.

Examination of the base of the skull gives no clue as to possible source of infection. The dura mater is normal, and there is no affection of the blood sinuses, while there is nothing abnormal about the petrous or nasal bones on their intracranial aspects; there is no evidence of pus in either internal auditory meatus. The middle ear on each side is the seat of inflammatory processes, but the nostrils are not invaded. The right tonsil is enlarged and ulcerated, the ulcer penetrating into a pulpy mass of degenerating tonsillar fragments. The right cervical glands, though enlarged, show no evidence of purulent degeneration.

*Spinal cord.*—Small quantities of pus invest the nerves at their points of exit from the dura mater, the dura itself not

being affected, except in the immediate neighbourhood of the nerves. Between the arachnoid and dura is a large quantity of turbid fluid, while the nerves are covered with pus and lymph. There is a general purulent infiltration of the pia arachnoid, and the vessels are greatly dilated.

*Chest.*—The heart is large and flabby. The muscle shows a degree of cloudy swelling. There is no endocardiac change. The lungs are normal.

*Abdomen.*—The kidneys are congested. The spleen is slightly enlarged and very friable. The liver shows pale yellow areas, about the size of an almond, at various parts.

*Bacteriology.*—Smears from the purulent mass at the base of the brain showed abundance of staphylococci and streptococci. An abundant growth was obtained on agar at the end of twenty-four hours, and subcultures on agar and in bouillon showed the presence of staphylococci and streptococci. No growth was obtained from a culture of the fluid in the lateral ventricles. A smear from the fluid in the spinal canal showed a predominance of short-chained streptococci and a few cocci and non-capsulated diplococci. The growth on agar at the end of twenty-four hours seemed to consist of streptococci only, and a subculture in bouillon gave a growth of streptococci. Transverse sections of the cord and membranes showed a purulent infiltration of the pia arachnoid, and on these infiltrations streptococci, which stained by Gram's method. A culture of the blood was not taken, but examination of the liver and spleen in sections failed to show the presence of micro-organisms.

*Histology.*—A transverse section of the cord and membranes shows an extensive small round-celled infiltration of the sub-arachnoid space. This inflammatory exudate is closely related to the nerve trunks, and seems to follow the nerve sheaths through the dura. The pia mater is also infiltrated, but there is no extension of the process into the fissures of the cord. There is dilatation of the blood-vessels in the sub-arachnoid space, and the vessels in a few of the nerves are markedly dilated. The substance of the cord is not affected.

Examination of the nerves shows—

1. Within the spinal membranes, a slight small round-celled infiltration of the sheaths and dilatation of the vessels inside the nerve sheaths.
2. Immediately outside the spinal canal, no implication of the nerve sheaths, and still some dilatation of the vessels.
3. In the extremities, no change in the nerves.

At no part is there any evidence of degeneration of the nerve fibres.

*Remarks.*—Reference has already been made to the rarity of meningitis as a complication in scarlet fever. Trousseau makes no mention of it, and Henoch writes as follows:—“I have no personal experience in regard to implication of the cerebral membranes by the scarlatinal process. The marked



Section of part of cord and membranes at point of exit of nerves, showing inflammatory exudate round nerves and dilatation of vessels in nerves.

cerebral symptoms which are found in severe cases of this disease do not, judging from my own observations, depend on meningitis. The most that we find is considerable hyperæmia or œdema of the pia mater and of the brain substance, similar to what takes place under all sorts of other conditions. The symptoms are generally due to vascular engorgement, resulting from the lowering of the heart's energy, which may also lead to thrombosis of the sinuses; but they are never due to regular inflammatory products. . . . I do not deny that meningitis may occur as the result of scarlet fever, but certainly its

clinical symptoms would be hard to differentiate from those of 'malignity.'" It is interesting to note that in this case, in addition to the other well-marked meningeal symptoms, there was also an intense restlessness resembling that which is so characteristic of anginose and malignant scarlet. The infective agent was undoubtedly the streptococcus pyogenes, and the source of infection was probably the throat; the infection may have been carried to the cerebro-spinal membranes by the lymphatics of the neck or by the blood.

A point of special interest is that the meningitis complicated what appeared to be a "second attack" of scarlet fever. There was no doubt as to the characteristic nature of the primary attack, although the throat was not markedly affected and did not present the signs of streptococcic infection at that time. The "second attack" or "re-infection" also presented symptoms of scarlet fever, the throat infection being severe and complicated by otorrhœa and adenitis, the meningitis supervening on this extensive streptococcic invasion. It is a well-known fact that the scarlet fever virus predisposes to streptococcic infection, and this apparent "re-infection" would appear to have been of streptococcic origin; this is all the more likely in that the primary attack was characterised by a very mild "sore throat," the patient thereby receiving no immunity to streptococcic infection from his primary attack.

I am indebted to Dr. Johnstone for permission to publish this case.

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THICKENING OF THE RIBS IN CHRONIC  
EMPYEMA.<sup>1</sup>

By GEO. HENRY EDINGTON, M.D., F.F.P.S.G.,

Surgeon, Out-patient Departments, Western Infirmary and Royal Hospital  
for Sick Children, Glasgow.

ON several occasions I have brought before the Society portions of ribs resected from patients who were suffering from chronic empyema.<sup>2</sup> These specimens showed different degrees of the same deformity, viz., an ingrowth from the pleural surface of the rib. In the highest degree of the deformity, the rib was so altered in shape as to present what I have called a "shelf-like" deformity. In my contribution on 9th March, 1903, I drew attention to the paper published on this subject by Parise in 1849, and I constructed a diagram from the figures by this author illustrating the mode of formation of the deformity.

To-night I show the Society further specimens which I have obtained from cases in Sir Hector Cameron's wards in the Western Infirmary. These show well the different stages of the change.

CASE I.—Mary K., aged 40, was admitted to Ward XIII on 18th December, 1904, with empyema on the right side. For five years previously she had suffered off and on with slight shortness of breath. In November, 1903, she was laid up with enteric fever, for which she was treated in Clydebank Hospital. She left the hospital in February, 1904. She made a slow convalescence, and did not regain her strength. At the time of her leaving hospital a cough commenced; this, as well as shortness of breath, has troubled her more or less since. In October, 1904, her doctor found fluid in the right pleural cavity, and a few days before admission the fluid, not having been absorbed, the pleura was tapped and found to contain pus.

On 1st January, 1905, Sir Hector resected a portion of the eighth rib in the axillary line and evacuated the pus. The portion of rib measures 5·5 cm. in length, 1·75 cm. vertically, and 0·5 cm. in thickness. On inspecting the cut ends, there

<sup>1</sup> Read at a meeting of the Glasgow Pathological and Clinical Society held on 13th February, 1905.

<sup>2</sup> *Transactions*, vol. vii, p. 167; viii, pp. 100-102; and ix, pp. 164-169.

is found slight, but distinct, thickening of the bone on the pleural side (2 in Fig.). The subcostal groove is well marked, but is not overhung to an appreciably abnormal extent. The thickening does not extend down to the groove.

CASE II.—Mary Jane C., aged 5, was admitted to Ward XIII on 23rd December, 1904.

On 22nd October, 1904, she had some consolidation of the right lung. She was practically well in fourteen days. Three weeks later she had an acute pleurisy, followed in a few days by a considerable effusion. The fluid was not absorbed, and on exploring the pleural cavity with a syringe pus was obtained.

A portion of the eighth rib about its angle, and below the inferior angle of the scapula, was excised on 1st January, 1905. The portion measures 3 cm. in length, 1 cm. vertically, and 0.6-0.8 cm. in thickness. The cut ends show marked new-formation of bone on the inner surface of the rib. The new bone is very dense, and appears as if laid down on the pleural surface of the rib, from which it can be easily distinguished. At the *posterior* extremity the new bone is arranged with its fibres at right angles to the rib, while *anteriorly* the appearance is that of superimposed laminæ. The subcostal groove is not well marked. The thickening is greatest near the upper border of the rib, so that the bone on cross section resembles a right-angled triangle, the right angle corresponding to the original upper margin of the rib.

CASE III.—George S., aged 9, was admitted to Ward XIX on 11th November, 1904, with a discharging sinus in the left pectoral region. Before admission, an abscess in the pectoral region had been opened by his doctor; it proved to be a pointing empyema, and, the discharge continuing, he was sent into hospital. The sinus was opened up, and a portion of one of the upper ribs, near its anterior end, was resected. A bougie was then introduced to determine the extent of the cavity, and a portion of a second rib, near the point of the instrument, was cut down on and excised. The latter was from the eighth rib in the post-axillary line. Some difficulty was experienced in raising the periosteum from its upper surface; the under surface was denuded with greater ease. This piece of rib, measuring 3.5 cm. in length, 1 cm. vertically, and 1 cm. in thickness, contrasted with that removed at the seat of the sinus anteriorly. The latter appeared normal, while the former showed distinct deformity. Examination of the



ends of the bone shows a difference in the respective arrangement of the cancelli. At the *posterior* end the original outline of the rib is distinct, but there is very marked thinning of the pleural surface. Parallel to this surface and nearer to it than to the free edge of the shelf is a lamina of dense bone. Extending from the lamina outwards to the pleural surface of the rib and inwards to the edge of the shelf are numerous cancelli. At the *anterior* end of the specimen there is no evidence of laminated structure; the whole thickness of the new bone is cancellated. These cancelli are thicker and the interstices between them are smaller than in the part of the surface representing the original rib. The subcostal groove is not well marked. On cross section, the bone presents the outline of a right-angled triangle, of which the right angle looks downwards and inwards towards the pleural cavity, as in Case III (4 in Fig.).

CASE IV.—Further specimens (two) from Janet L., aged 13. (First specimen from this case is reported and figured in the Society's *Transactions*, vol. ix, pp. 164-169.) These were removed three and a half months after the first specimen, and show a more advanced stage of rarefaction. Their *anterior* ends show a considerable amount of dense bone towards the end of the shelf; but *posteriorly* rarefaction in a high degree has occurred in both the new bone and the rib proper. The original pleural surface of the rib is represented by a thin lamina, while there are successive laminæ in the new bone. The cancelli are slender, and the spaces are very large. The subcostal groove is not marked.

These additional specimens are in agreement with the findings of Parise, already referred to.<sup>1</sup> They show that the portion affected corresponds to where the periosteum is in contact with the pleura. In this way the lower margin of the rib, protected as it is by the vessels and nerve in the subcostal groove, escapes, and the resulting deformity is triangular on section. The upper surface of the shelf is almost horizontal; the lower passes obliquely downwards and outwards to the lower margin of the rib.

In the accompanying figure are representations of the appearances seen on cross section of the ribs. The sections have been mounted, so that the outer surface of the bone is next the number; the pleural surface is to the reader's right. No. 1 represents a normal rib, obtained *post-mortem* from a subject

<sup>1</sup> *Transactions*, vol. ix, *loc. cit.*

in whom the pleura was healthy. No. 2 is from Case I. The new-formation extends from the inner lip of the subcostal



CROSS SECTIONS OF SERIES  
OF RIBS.

- 1, Normal; 2 and 3, from chronic empyema; 4 to 7, from cases with discharging sinus—secondary resection.  
( $\times 9/10$ ths, from a photograph.) For description, see text.

groove upwards to the upper margin of the rib, and is easily distinguished by its dead-white appearance. No. 3 is from Case II, and shows a much greater degree of new-formation. There is a vertical split in the new bone, near the original rib-surface, apparently indicative of lamination. It should be noted that both of these specimens were obtained from cases in which there was no discharging sinus. No. 4 shows a further change in new-formation, in the direction of rarefaction. The section represents the posterior end of the specimen obtained from Case III, and shows the vertical lamina of dense bone referred to above, with, external and internal to it, cancellated tissue. No. 5, from Case IV, shows considerable rarefaction in the whole surface of the section. The cancelli of the rib proper have mostly dropped out in the preparation of the section; those of the new-formation show parallel laminae. There is, further, considerable irregularity of the upper surface of the rib from osteophytic formation. No. 6 and 7 are from one of the cases formerly reported.<sup>1</sup> They show cancellation of new bone, in which there is no laminated arrangement. In 6, the original inner surface of the rib is seen, but not very distinctly; in 7, which is from the same rib (sixth) but more posteriorly, the outline of this surface is well-marked. In each of these last three cases (4 to 7) there had been a discharging sinus.

From a consideration both of the present series of cases and

<sup>1</sup> *Transactions*, vol. viii, p. 100 (Cath. R., aged 19).

of those formerly reported, it is seen that the thickening of the rib by new-formation of bone on the pleural surface may occur in cases before operation, as well as in those in which operation has been followed by a sinus necessitating secondary resection. In these latter, the new-formation is present in a greater degree, and in a more advanced stage of rarefaction.

In a former communication, dealing with a case of secondary resection for discharging sinus, I hazarded the opinion that the new-formation of bone might be designed to help in closing the cavity. At first sight this would not seem to be tenable in those cases in which the pus had not yet been evacuated, and in which, therefore, there would be no actual cavity to be closed. I have not ascertained the facts in the two cases (Cases I and II) in which the resection was primary, but Parise (*loc. cit.*, p. 457) is most emphatic on the point that flattening (*affaissement*) of the chest-wall is present, and that it always connotes bony thickening; and conversely, that bony thickening proves the existence of flattening. In view of such flattening indicating a diminution in the fluid contents of the pleural sac—and I presume that it does—the thickening, although dependent on inflammation, seems to me to point to a design in the direction which I have already indicated.

#### CASE OF TRAUMATIC STRETCHING OF THE LOWER CERVICAL NERVE ROOTS, WITH REMARKS ON SOME ALLIED CONDITIONS, INCLUDING THE MECHANISM OF THEIR PRODUCTION.

By SPENCER MORT, M.B., CH.B. GLASG.,

M'Cunn Research Scholar in Surgery and Bacteriology; late House Surgeon, Western Infirmary, Glasgow.

THE case about to be discussed presents many points of interest relatively to the selective influence of the trauma, and, I think, merits attention, from the extreme rarity of the condition. The patient was admitted to Ward XVIII of the Glasgow Western Infirmary on 23rd November, 1903, under the care of Sir William Macewen, to whom I am indebted for kind permission to publish the notes of the case.

The man, *æt.* 40, was employed as a carter, and while busy on his cart, with his back bent and his head down in a stooping

position, was struck on the back of the neck by a falling plank, and thrown on to his face. After the accident he was dazed for a few minutes, and was carried by his friends to a neighbouring house; soon afterwards, he quite recovered his senses. He felt then a pain of great severity at the back of his neck, radiating down both arms, and he experienced a sensation of numbness and tingling in the arms, fore-arms, and hands. There was also at that time a feeling of weakness, but no other sensory symptoms, in the legs. After the accident, he felt sick and vomited slightly.

He was conveyed to the hospital in an ambulance, and I saw him there about an hour after his mishap. At that time, he was fully conscious and intelligent. The pupils were mobile, equal, and moderately contracted, and there were no signs of any intracranial injury. There were no wounds about the head or neck, and there was no ecchymosis. He complained of pain only in the neck, and, on attention being directed to that part, great tenderness was elicited on pressure over the trapezius and deep muscles in the posterior triangle of the neck, from the occiput to the seventh cervical spine. At this time the feeling of weakness in the legs had passed off completely, and from the sequence of events, viz., the stun, followed by vomiting in a few minutes, I was inclined to the view that this sensation in the lower extremities was the result of a concussion, or primary shock, being symptomatic of that condition. Had there been an actual lesion in some part of the sensory nerve fibres of the legs, the condition would certainly have been more lasting. In the arms, the condition was quite different, distinct symptoms being there present. He stated that in both fore-arms and hands the numbness, or "dead" feeling, still persisted, a feeling as if they "were asleep." He perceived this most markedly on the radial side of the hands and particularly in the thumbs, and in the regions supplied by the circumflex, radial, and external cutaneous nerves. There was no paralysis of any of the muscles of the hands, arms, or legs. In the arms there was an area of anæsthesia, coincident with that of the paræsthesia; in the same area the temperature sense was in abeyance, and there was analgesia, though not to such a marked degree. There was no change evident in the contour of the spinal column, and there were no signs of aneurysm or mediastinal new-growth. The patient had never experienced similar symptoms before. He was not teetotal, but was never a heavy drinker. There was no history nor were there any signs of syphilis.

After admission he was kept in bed, and, in the course of a few days, the pain and tenderness gradually disappeared from his neck. Ecchymosis did not appear.

On the morning following admission, tactile sensation in the arms was perfect, and tests for the senses of pain and heat were normally responded to, while he himself said that the numbness had gone, except in the thumbs, where it remained for a few days. On the fifth day, he left the hospital of his own accord.

Such was the history and condition, on examination, of this most interesting case, which at first sight presents but little in the way of subjective symptoms and no tangible physical signs. This, indeed, may account for the scant mention of the condition, cases of such a slight degree as the present being, perhaps, overlooked in the same way as cases of, say, alexia.

On summing up and analysing the facts of this case, we note—

1. The traumatic nature of the condition, and (a most important point) the position in which the patient was at the moment of application of the force.

2. The limitation of the symptoms to the upper limbs, the trunk and legs escaping.

3. The entirely sensory nature of the symptoms.

1. It might be urged that the trauma simply serves as a pointer to direct one's attention to a careful survey of the bodily condition in general, after which, as in many classes of surgical cases, a previously existing condition is found, which is immediately attributed to the trauma, and one might legitimately argue that the sensory symptoms were due to a previously existing neuritis of some description.

In this particular case, however, we have the patient's statement, which must be taken for what it is worth, that there were no previous symptoms, nor were the usual etiological factors of brachial neuritis (alcoholism, syphilis, or intrathoracic neoplasm) existent. There was also the absence of motor symptoms.

2. The second fact excludes a transverse lesion of the cord, so that spinal compression from hæmorrhage or fracture must be put out of consideration practically, though theoretically we might possibly conceive a very localised and extremely well-defined compressing lesion in the sensory paths. We are thus led to the belief that, excluding lesions in the cord or peripheral nerves, the cause is to be found in the condition of

the nerve trunks, and further, from the third fact, the sensory nerve trunks alone, *i.e.*, the posterior roots at their origin, were involved.

Finally, from the area of sensory derangement—that supplied by the circumflex, radial, and external cutaneous nerves, as above described—the precise seat of injury may

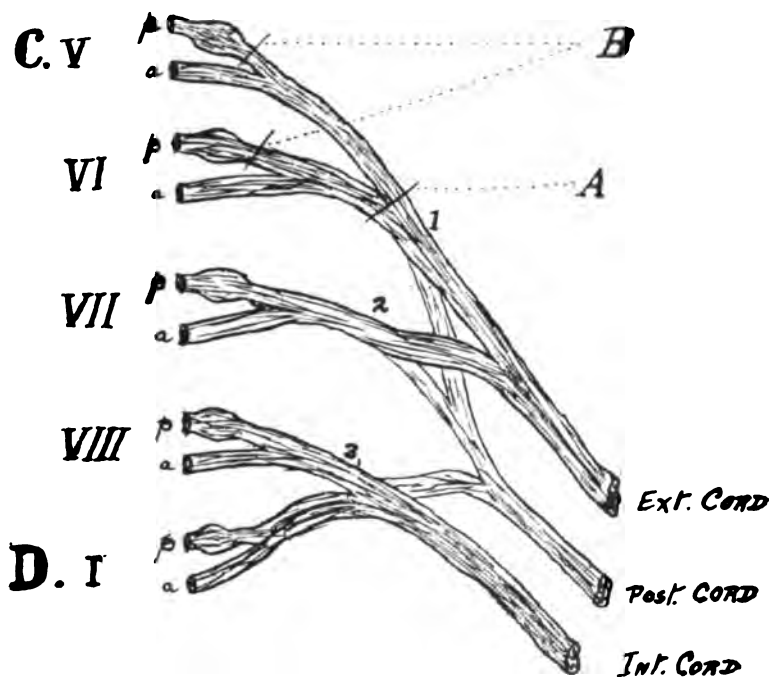


FIG. 1.

DIAGRAM OF THE BRACHIAL PLEXUS RELATIVELY TO THE SITUATION OF LESIONS.

A, Usual site in Erb-Duchenne paralysis, in the fifth and sixth nerves, or at their junction.  
B, Probable site of stretching in the case recorded. The lesion here is limited to the fifth and sixth sensory roots.

be located to the fifth or sixth sensory roots (see Fig. 1), which give fibres to those nerves.

Having determined the locality of the lesion, its nature must next be established.

Gross lesions, such as actual tearing of the fibres, disruption and compression from outpouring of blood in their vicinity, or nipping of the trunks by bony parts of the spinal column,

may be dismissed: the consequences of such would be more durable than in the case just recorded. The only condition remaining to us, then, is stretching of the posterior roots by the sudden, forcible flexion of the spinal column at the moment of injury.

The pain in the posterior triangle, though doubtless due in great part to direct bruising of the structures in that part, would be accentuated by the stretching of the nerve fibres and also of the muscular and ligamentous structures themselves. Of great interest in this connection is a similar case related by Sir William Macewen, where not only were the sensory symptoms more marked, but the motor roots also were involved, and the arms were in the "benediction" attitude, *i.e.*, the arms were drawn in to the sides, while the elbows and wrists were flexed, causing the fore-arms to be held up over the breast, in an attitude likened to that of prayer. With regard to the assumption of this attitude, it is most likely produced by the pull of certain groups of muscles against their temporarily paralysed antagonists.

In the better-recognised cases of obstetric paralysis (Erb-Duchenne paralysis) there is a well-defined paresis of supraspinatus, infraspinatus, deltoid, brachialis anticus, biceps, and supinator longus, producing the position of extension of the elbow with adduction and rotation inwards of the arm, a position similar to that assumed in those cases of congenital subspinous dislocation of the humerus, though in the latter there may be no paresis. In the obstetric palsy the lesion is located in the fifth and sixth cervical trunks only, thus it is easy to account for the more fantastic attitude got in the case described by Macewen, when the greater extent of the damage is remembered, the injury involving not only the fifth and sixth nerves, but being diffuse and affecting the functions of almost all the roots of the plexus.

The attention given to this condition of stretch or rupture without cord lesion has been but scant in Britain, suggestions of its existence being found more often than actual recorded cases, while the mode of production is unmentioned.

H. Mayo,<sup>1</sup> in 1836, records an interesting case, which is probably one of this kind, but he puts it down to concussion of the spinal marrow; while Hilton,<sup>2</sup> in discussing "concussion of the spinal marrow," says "a patient may experience slight and temporary numbness, or inability to control the legs and arms," and explains it by concussion of the cord

<sup>1</sup> Mayo, *Outlines of Pathology*, 1836.

<sup>2</sup> Hilton, *Lectures on Rest and Pain*, 1863.

against the vertebræ by the fall and the action of gravity, "or the little filaments of the sensitive and motor nerves, which are delicately attached to the spinal marrow, may, for a moment, be put in a state of extreme tension, because, as they pass through the intervertebral foramina, they are fixed there by the dura mater; and if the spinal marrow be dragged from them, the intermediate parts must necessarily be put upon the stretch, producing at the time the 'pins and needles' sensations."

Page,<sup>1</sup> in discussing transient abnormal sensations ("pins and needles") after nervous shock and considerable bruising or straining of the whole body, sums up his ideas by saying—"It is not without significance, we think, in considering the cause of these sensations, and the possibility of their being due to some irritation of the nerves as they proceed from the spinal cord, or as they pass through the foramina of the vertebral column, to point out that, although we have been carefully on the lookout for some such manifestation of central nerve disturbance, we have never seen a case in which herpes zoster has been met with after these injuries to the back." Thus, after forming the idea of nerve- without cord-lesion, he looks on it with suspicion, and is, on the above grounds, chary of its acceptance. Erichsen<sup>2</sup> gives a definite example, and allots to it its proper causation, in the case of a lady where, after violent flexion of the neck, there was rupture of the ligaments and soft structures of the cervical spine, with *no* fracture, but with persisting paralysis of the brachial plexus and an extraordinary mobility in all directions of the lower cervical spine. Bowlby<sup>3</sup> mentions "partial paralysis and anæsthesia of the upper extremities with no affection of the lower extremities or sphincters, and no evidence of injury to the spinal cord," following violence to the lower part of the neck by falling into a cellar. He attributes this to contusion of the brachial plexus; but I question if this case is not the result of indirect violence rather than bilateral contusion.

In the etiology of the condition an important point to which attention was directed in the case I have recorded is the direction of the impact to the vertebral column, which point is also illustrated in the cases cited. On this question much stress is laid by Macewen, who, in his teaching, emphasises the fact that in trauma producing sudden extension of the spine

<sup>1</sup> Page, *Injuries of the Spine and Spinal Cord*, 1885.

<sup>2</sup> Erichsen, *On Concussion of the Spine* (Case xxxiv), 1875.

<sup>3</sup> Bowlby, *Injuries and Diseases of Nerves*, 1889.



there is a greater liability to fracture; while in that producing flexion, stretching or rupture of the nerve roots and adjacent structures is more likely to occur. The explanation of this is that in the first condition the convexity of the curve produced is in front, while its concavity is behind, causing crushing or breaking of the slender pedicles and laminae of the vertebræ; whereas in the second instance the converse obtains, the strong bodies of the vertebræ resisting the compressing force, while the lighter and more delicate posterior parts are stretched or torn asunder (see Fig. 2). This affords an explanation

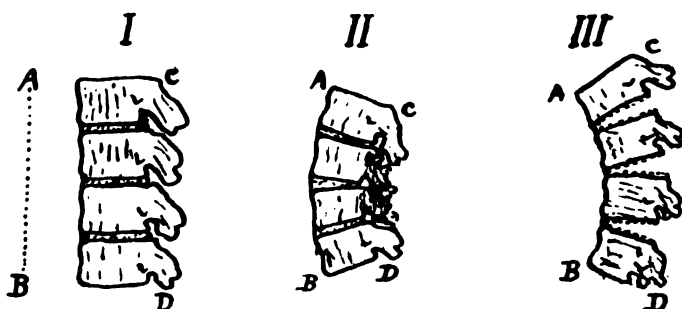


FIG. 2.

REPRESENTATION OF THE EFFECTS OF FORCED FLEXION AND EXTENSION ON THE VERTEBRAL COLUMN AND NERVE ROOTS.

- I. This diagram may be taken to represent the normal position. *AB* is the distance measured along the anterior surface of the bodies. *CD* is measured along the posterior aspect.
- II. Trauma producing over-extension. The distance *AB* remains much as before, the bodies being kept in apposition by the common spinal ligaments. *C* is approximated to *D*, and crushing of the spines and nerve roots is produced with consequent serious lesion of the nerve roots and cord itself.
- III. Trauma producing flexion. The bodies resist pressure and rotate from the front, and the structures behind open out in a fan-shaped manner; thus stretching or rupture of the more posterior parts, especially the sensory roots, occurs, causing neuritic symptoms, transient in the case of a stretch, more lasting if actual rupture be produced.

of the causation of the nerve injury by indirect violence, a method which is at present not usually recognised as a factor in brachial plexus injuries.

Thorburn<sup>1</sup> classifies tears and contusions of the plexus into two main groups—(1) Those caused by a direct pull, and (2) those caused by contusion from a direct blow, or from the driving in of a broken or dislocated bone, or crushing between the unbroken clavicle and the first rib. He makes no mention of the condition produced by indirect violence, which method seems almost entirely to have been ignored. That

<sup>1</sup> Thorburn, article, "Brachial Plexus," *Encyclopædia Medica*, 1902.

the last is not merely a convenient explanation is evident, not only clinically but also practically, from a study of the anatomical peculiarities of the bony and ligamentous structures of the part.

If the column be examined in the cadaver, the elasticity of the interspinous ligaments and ligamenta subflava is very striking, permitting normally a range of movement capable of abolishing the normal anterior curvature, and so straightening the column. The limit of extensibility of the posterior ligaments having been reached, any attempt at further movement in this direction is resisted. In the other direction, the convexity can be increased and the column bent back almost to a semicircle, but at that limit a bony barrier is encountered, the spines interlocking and becoming jammed together.

In two cases recent spinal columns were obtained, and violence sufficient to cause gross lesions was applied. In the first experiment, in both columns with flexion, the behaviour was just as might have been predicted, the bodies rotating and the spines becoming more and more separated from one another, till at last the ligaments of the laminae and spines gave way, without any change in the bones themselves. The converse state was also induced in both by progressively increasing extension. Under these circumstances the locking of the articular and spinous processes was first noticed, after which the pull on the anterior and posterior common ligaments was intense, with an equally great compressive force on the bony structures of the neural ring. On still further increasing the stress the bone cracked and warped, while the anterior ligaments survived the test, remaining practically intact after subjection to a tensile stress of great magnitude, and thus demonstrating their strength and power of resisting violence.

In concluding, I wish to express my indebtedness to Dr. Ivy M'Kenzie for access to *post-mortem* material.

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## Obituary.

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DAVID SMITH, M.D., M.R.C.S.

BY the death, on the 4th ult., of Dr. David Smith, Glasgow has lost one of her oldest practitioners. Deceased, who was in his seventy-first year, began his professional life under the late Dr. William Mackenzie. As was to have been expected, he directed his attention at any early stage to ophthalmological work, and he made and continued to enjoy, up to the end, a large practice in this branch of professional work. He died after a short illness, thought to be due to exposure at golf.

Naturally reserved and unobtrusive, he was, perhaps, little known to the younger generation of practitioners, but his figure was familiar to many of the older members of the profession.

He is survived by a widow, and a son and daughter.

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## CURRENT TOPICS.

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UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B, Botany; Z, Zoology; P, Physics; C, Chemistry):—

David Rutherford Adams (z)	Charles Brash (B, P)
John Allan (B, Z, P, C)	Morris William Broudy (B, Z, P, C)
Andrew Clark Anderson (z, c)	Alexander Hogg Brown (B, Z, C)
James George Anderson (z, c)	Carl Joseph Barrett Buchheim (B, Z)
William Anderson (z, c)	John Adam Gib Burton (Z, P, C)
William Hunter Stirling Armstrong (P, C)	John Allan Munro Cameron (z, P)
James Currie Auchencloss (C)	Andrew Hood Clark (z, c)
David Barbour (z, c)	James Lang Cochrane (z)
Arthur Munby Bayne (z)	James Cook, Coalburn (B, Z)
Emile Augustine Cameron Beard (B, z)	Rutherford Cramb (P)
Charles Stewart Black (z)	Donald Downie (B, Z)
John Blakely (B, P, C)	Charles Duguid (z, c)
Douglas Morris Borland (z)	Donald Fisher (z, c)
	Thomas Scouler Fleming (z)
	George Fletcher, M.A. (z, c)

Robert Dunlop Black Frew (P, C)  
 James Brunton Galbraith (B, P)  
 Robert Gale (Z)  
 William Ernest Gemmell (Z)  
 David Gibson (P)  
 Alexander Gordon Gilchrist (Z, C)  
 Robert Dunlop Goldie (Z, C)  
 George Stevenson Gordon (Z)  
 Edward O'Driscoll Graham (Z)  
 Joseph Graham (B, Z, P, C)  
 John Granger (Z, C)  
 Kenneth Charles Gordon Gray (Z, C)  
 Albert William Gregorson (B)  
 George Haddow (Z, P)  
 John M'Lean Hendry (P, C)  
 Bentley Moore Hunter (Z, C)  
 James Walker Jones (Z, C)  
 John Parlane Kinloch (Z, P)  
 Thomas Joseph Kirk (B, C)  
 David Neilson Knox (Z, C)  
 John Lang (C)  
 Alexander Leishman (Z, C)  
 William Thomson Lindsay (Z, C)  
 George Smith Livingston (C)  
 William M'Adam, M.A. (Z, C)  
 James Macallan (B, Z, P)  
 William Charles Macartney (Z, P)  
 Frank Crombie Macaulay (C)  
 Robert M'Charlie (Z, C)  
 William M'Connell (Z, C)  
 Donald M'Dougall (C)  
 Donald M'Intyre (B)  
 Robert Buchanan Forbes M'Kail (Z, C)  
 William Maxwell M'Kie (B, P, C)  
 Robert Hugh M'Killop (B)  
 Alexander M'Kimon (Z)  
 Donald Mackinnon (B, P, C)  
 John James Mackintosh (P, C)  
 Murdoch Hugh M'Leod (B, Z)  
 John William M'Nee (Z, C)  
 John Hart M'Nicol (Z, C)  
 Murdo MacPhail (P)  
 Allan M'Pherson (B, C)  
 Murdo M'Kenzie MacRae (B, P)

Thomas Marlin (Z, C)  
 John Park Mathie (C)  
 Archibald Mitchell (B)  
 Hyacinth Bernard Wenceslaus Morgan (Z, C)  
 John M'Intosh Morgan (B)  
 John Mowat (P, C)  
 James Muir (B)  
 Findlay Murchie (B)  
 Charles Sutherland M'Kay Murison (P)  
 Frederick Lewis Napier (Z)  
 William Niccol (Z, C)  
 Robert Charles Robertson (Z)  
 Hugh George Robinson (Z, C)  
 Alfred Roemmele (Z, C)  
 William Wilson Rorke (Z, C)  
 William Rutherford (Z, C)  
 Neil Campbell Scott (B, Z, P, C)  
 William Wilkie Scott (P, C)  
 James Johnston Sinclair (Z, P, C)  
 James Stewart Somerville (Z, P)  
 Richmond Steel (Z)  
 Alexander Stewart (Z, P)  
 Arthur Ford Stewart (Z, C)  
 Donald Stewart (P, C)  
 William Ballantine Stewart (B)  
 Robert Wilson Sutherland (Z, C)  
 David Campbell Suttie (Z, C)  
 Robert Sweet (Z)  
 Archibald Taylor (Z, C)  
 Duncan Macnab Taylor (Z)  
 Walter Telfer (B, Z)  
 Aidan Gordon Wemyss Thomson (Z)  
 James Lachlan Ure (Z, P)  
 Charles Herrmann Wagner (B, Z, P)  
 William Samuel Waterhouse (C)  
 Tom Paul Watson (P)  
 James Brown Whitfield (Z, C)  
 William Crowley Whittingham (Z, C)  
 John Alexander Wilson (Z, C)  
 William Mitchell Turner Wilson (C)  
 John Youngson Wood (Z, C)  
 David Yellowlees (Z, C)  
 Douglas Young (Z, C)

WOMEN.

Christina Barrowman (P, C)  
 Margaret Baird Sproul Darroch (C)  
 Mary Cochran Mitchell (C)  
 Margaret Muir (C)

Jessie Deans Rankin (P)  
 Margaret Eason Robertson (P, C)  
 Olive Robertson (P)  
 Margaret Elizabeth Rutherford (C)

The following have passed the second professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A, Anatomy; P, Physiology; M, Materia Medica and Therapeutics):—

Wallace Wright Adamson (A, P)  
 Alexander Anderson (A, P)  
 Andrew Hamilton Arnott (A)  
 David Arthur (A, P)  
 Herbert Bertram (A, P, M)  
 Robert Inglis Binning (A, P)  
 William Brown, M.A. (A, P)  
 Murdo Buchanan (A)  
 James Cairncross (A, P)  
 Thomas Hay Campbell (A, P, M)  
 John Paterson Carmichael (A)  
 John Humphrey James Victor Coats  
 (A, P)

Alexander Johnston Couper (A, P)  
 James Robert Craig (A, P, M)  
 John Craig Crawford (A)  
 Charles Adolphus Crichton (A, P, M)  
 John Alexander Doctor (A, P)  
 Richard John Driscoll (A)  
 James Dunbar (M)  
 Donald Duncan (A, P, M)  
 William Hunter Duncan (P, M)  
 Allan Dunsinuir (A, P)  
 Leonard John Dunstone (A, P, M)  
 William Marley Elliott (A, P, M)  
 Archibald Fairley (A, P)  
 William Miller Fairley (M)  
 Thomas Forsyth (P, M)  
 George Muir Fraser (P, M)  
 Samuel Nicol Galbraith (A, P)  
 Berkeley Gale (A, P, M)  
 Henry Maxwell Granger (A, P, M)  
 John Vincent Grant (P, M)  
 Thomas Purdie Grant (A, P)  
 James Dow Gray (P, M)  
 William Cooper Gunn (A, P, M)  
 Thomas Harkin (P, M)  
 John Mitchell Henderson (P)  
 Archibald Hogg (A, P, M)  
 Andrew James Hutton (A, P, M)  
 Percy James Kelly (P)  
 Walter Hermann Kiep (A, P)  
 James Towers Kirkland (P, M)  
 William Leitch (A, P)  
 George Ligertwood (M)  
 Ernest Bowman Macaulay (P, M)  
 Thomas M'Crick, M.A., B.Sc., (M)  
 Coll Macdonald (A, P)  
 James M'Donald (A, P)  
 John Robert M'Gilvray (P, M)

Robert M'Inroy (A, P, M)  
 William Anderson M'Kellar (M)  
 Murdo Duncan M'Kenzie (M)  
 Thomas Cooper Mackenzie (M)  
 Allison David MacLachlan (A, P)  
 Donald Cameron MacLachlan (P, M)  
 Arthur Norman Roy M'Neill (A, P, M)  
 John M'Vittie (A, P, M)  
 Isa Carswell Marshall (A, P)  
 James Hogg Martin (A, P)  
 William Spence Melville (A, P)  
 Allan Frederick Miller (P, M)  
 John Wilson Miller (A, P)  
 Robert Stewart Miller (M)  
 William Miller (M)  
 Hugh Morton (A, P)  
 Robert Charles Muir (P, M)  
 Patrick O'Brien (A, P, M)  
 John Oswald (M)  
 Isaac Papiermeister (A, P, M)  
 Donald Renton (A, P, M)  
 Murdoch Mann Rodger (M)  
 Alexander Scott (A, P, M)  
 George Waugh Scott (A, P, M)  
 John Smith, M.A. (A, M)  
 John Macgregor Smith (A)  
 John Steedman (A, P, M)  
 Campbell Kay Stevenson (A, P)  
 William Stevenson (M)  
 John Stewart, M.A. (P, M)  
 John Torrance Weir Stewart (M)  
 Matthew John Stewart (A, P, M)  
 Lawrence Storey (A, P)  
 John Anderson Struthers (A, P, M)  
 John Martin Taylor (P)  
 Robert Scott Taylor (A, P)  
 Hugh Johnstone Thomson (A, P)  
 Robert Todd (M)  
 Martin Turnbull (M)  
 John Morris Walker (P, M)  
 George Wallace (P)  
 Hugh Ferguson Watson (M)  
 William Barrie Watson (A, P, M)  
 Thomas Macknight Watt (A, P)  
 Frank Ritchie Wilson (A, M)  
 Hugh Mundle Wilson (A, P, M)  
 Samuel Wilson, M.A. (A, P, M)  
 Thomas Winning, M.A. (A, M)  
 Garabed Yeghia Yardumian (A, P, M)  
 Matthew Young (A, P)

## WOMEN.

Martha Maclean Buchan (P)  
 Ella Smith Hill, M.A. (P)  
 Annie Rennie Hird (A, M)  
 Janet Annie Macvea (M)

Florence Mann (A, P)  
 Vera Dagmar Reis (A)  
 Jane Isabel Robertson, M.A. (A, P)

Mr. Thomas R. A. A. G. Crawford has passed the second professional examination (anatomy and physiology) for the degrees of Bachelor of Medicine and Master in Surgery (M.B., C.M.)

The following have passed the third professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (P, Pathology; M, Medical Jurisprudence and Public Health):—

James Montgomery Anderson (P, M)  
 Thomas Barbour, B.Sc. (P, M)  
 Charles Burns (M)  
 William Rome Cammock (P, M)  
 William Archibald Campbell (P, M)  
 Donald Livingstone Carmichael (P)  
 Henry Howard Christie (P)  
 John Sowers Clark, M.A. (P)  
 Thomas Goodall Copestake (P, M)  
 James Coutts (P, M)  
 Andrew Donaldson Cowan (P, M)  
 Thomas Lawson Craig (P, M)  
 Arthur Muir Crawford (P)  
 Weir Burns Cunningham (P)  
 Harold Windley Dempster (P)  
 Allan Campbell Douglas (P, M)  
 James Richan Drever, M.A. (P, M)  
 Ernest Milne Eaton (P)  
 John Ferguson (P)  
 Edward John Fitzgerald (P)  
 Thomas Henderson Forrest (P)  
 William Gilbert (P)  
 William Gilfilan (P, M)  
 Arnold Harris Gray (P, M)  
 Robert Neil Guthrie (P, M)  
 John Hammond (M)  
 William Towers Hardie (M)  
 Saul Hyman Harris (M)  
 Robert M'Cowan Hill (P)  
 Lawrence Hislop (M)  
 John Keys (P, M)  
 Alexander M'Call (P, M)

James M'Farlane (P, M)  
 William Ferguson Mackenzie (P)  
 William MacLeod (P)  
 Alister Argyle Campbell M'Neill (P, M)  
 Charles James Colquhoun Macquarie (P)  
 William Hislop Manson, M.A. (P, M)  
 Robert Marshall (P, M)  
 John Miller (P, M)  
 Peter Mitchell, M.A. (P)  
 Hugh Walker Moir (P, M)  
 Patrick Joseph O'Hare (P)  
 James Hogg Paul (P, M)  
 Arthur Geoghegan Paxton (P, M)  
 John Reid (M)  
 Frederick Gordon Robertson (P, M)  
 William James Rutherford (P, M)  
 John Samson (P)  
 Alfred Cecil Sharp (P, M)  
 James Charles Donaldson Simpson (P)  
 Robert Alexander Slater (P, M)  
 William Snellie (P, M)  
 Thomas Baillie Smith (P)  
 James Stevenson (P, M)  
 John Stevenson (P, M)  
 Arthur Anderson Stewart (P)  
 David Laurence Tate (P, M)  
 Charles Samson Thomson (P)  
 James Kennedy Welsh (P, M)  
 David John Williams (P)  
 George Haswell Wilson (P, M)  
 Moses Youdelevitz (P)

#### WOMEN.

Rose Isabel Hudson (M)  
 Edith Oversby (P, M)  
 Agnes Picken, M.A. (P, M)

Margaret Baillie Taylor (M)  
 Christina Gibson Thomlinson (P)

Mr. Robert Stewart M'Kim, M.A., has passed the third professional examination (regional anatomy, materia medica and pharmacy, and pathology) for the degrees of Bachelor of Medicine and Master in Surgery (M.B., C.M.)

At the recent professional examinations for the degrees of M.B., Ch.B., the following candidates passed with distinction in the subjects indicated:—

*First Examination.*—In *Botany, Zoology, Physics, and Chemistry*: John Allan. In *Zoology and Physics*: John Allan Munro Cameron, James Lachlan Ure. In *Zoology and Chemistry*: William M'Adam, M.A. In *Zoology*: Charles Duguid, John William M'Nee, William Wilson Rorke, Robert Sweet, Douglas Young. In *Physics*: Jessie Deans Rankin, Margaret Eason Robertson, Neil Campbell Scott, William Wilkie Scott, James Johnston Sinclair, James

Stewart Somerville, Alexander Stewart. *In Chemistry*: Morris William Broudy, David Neilson Knox, John Park Mathie.

*Second Examination.*—*In Anatomy and Physiology*: Walter Hermann Kiep, Matthew Young. *In Physiology and in Materia Medica and Therapeutics*: Matthew John Stewart. *In Anatomy*: James Hogg Martin. *In Physiology*: Wallace Wright Adamson, Leonard John Dunstone, William Cooper Gunn, Andrew James Hutton, Hugh Morton, John Stewart, M.A., Hugh Johnstone Thomson, William Barrie Watson. *In Materia Medica and Therapeutics*: Thomas Hay Campbell, James Robert Craig.

*Third Examination.*—*In Pathology and Medical Jurisprudence and Public Health*: William Gilfilan, Alfred Cecil Sharp. *In Pathology*: William Rome Cammock, Peter Mitchell, M.A.; Thomas Baillie Smith. *In Medical Jurisprudence and Public Health*: Charles Burns, Robert Marshall, Agnes Picken, M.A.

In the third professional examination for M.B., C.M. (old regulations), Robert Stewart M'Kim, M.A., passed with distinction in pathology.

UNIVERSITY REFORM.—One of the most important matters that has engaged the attention of the University Court for some time was raised at the monthly meeting by Professor Jones. The following motion was submitted:—"To call attention to the difficulty in bringing about changes in the curricula, the arrangement of winter and summer session and other matters, arising from the fact that such changes can be carried out only if the four universities act together, and to move that a committee be appointed to consider the question." In moving its adoption, Professor Jones commented upon the great difficulty experienced under the present conditions of effecting any important changes in connection with the Scottish universities. They were by Act practically tied to each other, and enjoyed less liberty than any universities in England, France, Germany, or America. After detailing the cumbrous method which each of the Scottish universities had to follow if they endeavoured to secure a new Ordinance, Professor Jones explained that in several of the English universities such changes as were involved in the Ordinances could be effected by those bodies themselves. It would be a great help to the Scottish universities if they possessed such powers, as they could each develop on their own lines. He would not, however, cut them absolutely free, as he would insist on a uniform preliminary examination and other common regulations which could be embodied in something equivalent to the charters in the English universities.

COMPLIMENTARY DINNER TO PROFESSOR A. R. FERGUSON.—In our last issue we announced the appointment of Dr. A. R. Ferguson to the Chair of Pathology in the Egyptian Government School of Medicine at Cairo. On the evening of 4th March, Professor Ferguson was entertained to a

complimentary dinner in the St. Enoch's Station Hotel, on the occasion of his approaching departure to take up the duties of his new post. Professor Muir occupied the chair. Drs. Dittmar and Alex. Macphail acted as croupiers. There was a large company, which included Dr. Finlayson and several members of the Senate. Professor Muir proposed the toast of the evening. He did so in felicitous terms, which were received with hearty assent. Professor Ferguson replied briefly. Professor Glaister and Drs. Macphail and R. D. Campbell contributed to the vocal entertainment, and a pleasant evening was brought to a conclusion by the company singing "Auld Lang Syne."

GLASGOW GRADUATES IN THE NORTH OF ENGLAND.—Glasgow University counts over one hundred of its alumni in the North of England, and there was a big muster last month at the annual dinner of the North of England Glasgow University Club at the Grand Hotel, Sunderland. Councillor Dr. Gordon Bell, Sunderland, presided. The guest of the occasion was Sir William Macewen, who responded to the toast of "Alma Mater," which had been submitted by Dr. Farquharson, Newcastle. Sir William, in the course of an interesting address, said that they could fairly claim that no university had contributed more to the material prosperity of the world than the University of Glasgow. The leading note of his speech, however, was the utterance of a solemn warning against any tendency on the part of Britons to believe in their perfection, that most serious of intellectual diseases. He indicated the work that was being carried on in the great Continental countries and in America in the practical encouragement of original scientific research, and urged that we should exert ourselves ceaselessly to learn from and keep abreast of other nations.

GLASGOW HOSPITAL SUNDAY FUND.—At a meeting of the general committee in charge of the above fund, the following allocation of the collections for 1904 was made in terms of the constitution:—Royal Infirmary, £2,174, 9s. 6d.; Western Infirmary, £1,713, 17s. 3d.; Victoria Infirmary, £661, 13s. 3d.—£4,550. It was agreed that next Hospital Sunday be held, as heretofore, on the last Sunday of November.

PROGRESS OF SANITATION.—"Development of Sanitation during the Nineteenth Century" was the subject of the centenary lecture delivered by Dr. A. K. Chalmers to the



Glasgow Royal Philosophical Society last month. While sanitary legislation took shape almost wholly during the second half of the nineteenth century, the conditions which it was designed to cope with had already attracted much attention. What the nineteenth century did for preventive medicine was to create the atmosphere in which disease came to be regarded not only as a misfortune to the individual, but as a factor in national welfare. Its causation was seen frequently to be dependent on environment, and the sanitary code of to-day aimed at modifying this environment. Dr. Chalmers traced the various social and political movements from which emerged the first Public Health Act of 1848. It was the outgrowth of several enquiries into the conditions of pauperism and poverty, and the prevention of disease became in consequence a helpful auxiliary in the prevention of poverty. The nineteenth century left us with the finger of warning pointing to the hitherto unclaimed portions of our communities. The educationally defective, the industrially inefficient, the population of the slums, the whilom inhabitants of the poorhouse and jails—it was with these we must get into closer touch. In this city they might advance the problem more than was done by selecting an area and directing every educational, poor law, and sanitary agency towards the combined study of the causes at work. They would thus have a clinical demonstration of the effects of disease on the social organism, and might discover something further of its causes.

**THE STANDARD OF SCHOOL CHILDREN.**—The President of the Board of Education has appointed, with the concurrence of the President of the Local Government Board, an inter-departmental committee—

1. To ascertain and report on what is now being done, and with what result, in respect of medical inspection of children in public elementary schools.

2. And, further, to inquire into the methods employed, the sums expended, and the relief given by various voluntary agencies for the provision of meals for children at public elementary schools, and to report whether relief of this character could be better organised without any charge upon public funds, both generally and with special regard to children who, though not defective, are, from malnutrition, below the normal standard.

The Commissioners are:—Mr. H. W. Simpkinson, C.B., Assistant Secretary of the Board of Education (chairman); Mr. H. Franklin Parsons, M.D., Assistant Medical Officer under the

Local Government Board; Mr. C. Jackson, Chief Inspector of Elementary Schools under the Board of Education; Hon. Maude Lawrence, Chief Woman Inspector of Board of Education; Mr. R. Waldron, Senior Examiner of Board of Education; Mr. E. H. Pelham, Junior Examiner of Education, as secretary.

**TOOTH-POWDER versus GUNPOWDER.**—In the *Fortnightly Review* Mrs. John Lane has an amusing article in which she claims that the want of proper attention to the teeth is the gauge of our national decadence. The toothbrush she holds is of more importance than the sword, and tooth-powder more potent than gunpowder. She would require all Board schools to furnish their pupils with toothbrushes and tooth-powder, and would have a general brushing of the teeth every morning as part of the regular work of the school. She would have a dentist attached to each district, whose duty it would be to gratuitously attend to the teeth of the children. Only thus, she considers, can we have good war material—by cultivating the health of our future young men, and preventing the premature decay of teeth. “England will in due course lose her proud position as the greatest nation in the world simply because England would not go the dentist.” The dentists will owe Mrs. Lane a debt of gratitude!

**THE PREVENTION OF PREMATURE BURIAL.**—The narrow escapes from premature interment recently reported in the press, and the laxity of the existing laws relating to certification of death, have stimulated the London Association for the Prevention of Premature Burial to prepare a draft Bill for amending the law of burial. The object of this Bill is to provide security against the interment of persons who are only apparently dead, and who might recover if time were allowed. The law at present gives no security against such premature interment. Even a medical certificate of death is unnecessary. The proposed Burial Amendment Act provides accordingly that no burial shall take place without a medical certificate of death, and that such certificate shall state the signs from which death is inferred.

**AGE AND EFFICIENCY.**—Dr. Osler's recent humorous comments on the desirability of discarding the services of a man when he has reached the age of 60, have engendered quite a remarkable amount of criticism. Dr. Robertson Wallace has an excellent article on the subject in *London Opinion*, in which he says that a man is only as old as his arteries, and

that the art of life is to conciliate those arteries. Years are no criterion of a man's capacity; all depends upon the strain he has imposed upon his system, together with the quality of material at the start. The immediate causes of the early alteration for the worse in the condition of our vessels he tabulates as—(1) Chronic intoxications by such agents as alcohol, lead, and the poison of gout; (2) over-eating; (3) excessive muscular work; (4) kidney disease. Muscular strain is the most potent cause of early degeneracy, while among brain workers age often makes for greater efficiency. "To be on the safe side call no man inefficient till he dies."

**MUNICIPAL MILK DEPÔTS.**—Dr. Butler-Hogan, in his annual report, devotes a special section to Municipal Milk Depôts, which should be of interest in view of the recent departure in this direction in Glasgow. Dr. Hogan compares the British systems with that of Rochester City, New York, and states that the Rochester method is immensely superior to anything that has been achieved in the United Kingdom, whether at Battersea, Liverpool, Glasgow, St. Helens, or Bradford. At Rochester a central station at which the milk is prepared is organised each season on a farm outside the city, where a trained nurse and assistants have full control of the cows, utensils, bottles, &c., and where all the milk work is carried on in a portable milk laboratory. Everything coming in contact with the milk is thoroughly sterilised in steam sterilisers. The milk itself is not subjected to any process. Sterilising and pasteurising are considered only an open invitation to the milkman to be careless in the production and handling of milk. "At the milk station on the farm the milk is taken from clean, well-fed, tested cattle into sterile cans, which are carried to the barn in sterile cheesecloth bags. Just before milking the cow's udders are washed. A sterile cheesecloth cover is placed over the cow, the first portion of the milk being rejected. So soon as the cans are filled they are immediately covered by a layer of cheesecloth held in position by a rubber band. The cans of milk thus covered are immediately taken into the laboratory, 200 yards away, where the milk is properly diluted, sweetened, and turned off into sterile nursing bottles of various sizes of the Siebert type. The bottles are covered with sterile rubber corks, placed in racks, covered with cracked ice, and immediately transferred to the city for use.

"As to the cleanliness of milk prepared in this way, forty-three daily samples were found to average not more than

14,000 bacteria per cubic centimetre, while city milk for the same period approximated 235,000 per c.c. . . . It would be an immense gain were this system adopted by the municipal authorities of this country. We should then have good clean milk which it would, under ordinary conditions, be unnecessary to sterilise. Statutory powers are only wanting; they will probably be obtained some centuries hence when the annual holocaust of thousands of innocent children will at length rouse the manhood of England to the 'root and branch' extermination of the barnacles that clog the wheels of public health progress."

### NEW PREPARATIONS, &c.

"TABLOID" QUININE, CAMPHOR, AND ACONITE (London: Burroughs Wellcome & Co.)—This preparation may be used as a diaphoretic and antipyretic in cases of catarrh and influenza, and also in inflammatory conditions where aconite reduces the rate and force of the heart, and assists quinine and camphor in promoting diaphoresis and combating fever. The dose is one every half-hour till diaphoresis is produced and the pulse slowed. The following is the formula:—

Quinine bisulphate, . . . . .	gr. $\frac{1}{2}$ (0.016 gm.)
Camphor, . . . . .	gr. $\frac{1}{4}$ (0.016 gm.)
Tincture of aconite, . . . . .	min. 1 (0.059 c.c.)

VIROL (London: Virol, Limited).—We have received samples of this now well-known preparation, which is to be regarded as a food rather than a medicine, and is intended to take the place of cod liver oil in the administration of fat. Virol is prepared from malt extract, red marrow from the ribs of cattle, eggs, lime, and lemon syrup. It has a consistence similar to that of malt extract, and is decidedly agreeable to the palate. It may be taken by itself, or on dry bread or biscuit, or in a bread and butter sandwich, or in warm milk, porridge, or milk pudding. A baby may get an eggspoonful, while an adult may take one or two teaspoonfuls several times a day. Virol provides us with an excellent means of administering fat and organic compounds of iron and phosphorus. It is supplied in jars of various sizes, and can also be obtained in bulk for use in institutions.

LOCK AND KEY CARBOLIC ACID BOTTLE.—We have received from Messrs. Thos. Christy & Co., Old Swan Lane,

London, E.C., their new lock and key bottle (patent). The invention consists in a rubber stopper, hinged on a wire collar which fits into a groove in the neck of the bottle. Hinged on the opposite side of the collar is a metal plate with a spring lock. The stopper having been put into the mouth of the bottle, the lock-plate is applied over it, the bolt of the lock fitting into a catch on the stopper, and on pressing down the plate the lock is closed. To open, the bolt is withdrawn by a key attached by a chain to the collar. This key may be detached and worn on a key-ring. The lock has been applied to a bottle of carbolic acid disinfectant, and will undoubtedly do much towards the prevention of accidental poisoning. Its moderate cost—12 oz. graduated bottle of the disinfectant, with patent lock stopper, for one shilling—should ensure a wide popularity. The principle is being applied to other poison bottles.

## MEETINGS OF SOCIETIES.

### GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1904-1905.

MEETING II.—4TH NOVEMBER, 1904.

*The President, DR. DAVID NEWMAN, in the Chair.*

#### I.—CASE OF TUBERCULAR PERITONITIS TREATED WITH INJECTIONS OF KOCH'S OLD TUBERCULIN.

BY PROF. T. M'CALL ANDERSON.

W. B., æt. 8, was admitted to the Western Infirmary on 4th July, 1904, complaining of swelling and pain in the abdomen of about three months' duration. Until the onset of the present illness, he had always been considered a strong, healthy boy.

This illness began in April, 1904, with diarrhœa. His bowels were very loose, and he had four or five fluid motions in the twenty-four hours. The character of the motions varied greatly—at one time whitish; at another, greenish;

and at another, yellowish. They were rather offensive in odour. He had not much pain when his bowels moved. For a month before admission the diarrhoea had ceased. About the middle of May, swelling of the abdomen was first noticed, and over the lower part he complained of tenderness on pressure. His appetite gradually failed, and he lost weight and colour. He had a slight cough, but no expectoration; there had been occasional night sweats.

On admission, he presented a fairly well-nourished appearance, and his colour was fair. His tongue was moist, and coated with a slight white fur. The bowels were constipated, and his appetite was poor. Temperature was normal. The abdomen was prominent and somewhat tense, and he complained of tenderness on pressure over the umbilical and hypogastric regions. There was some free fluid in the abdomen, as was evidenced by fluctuation, and by dull percussion in both flanks in the dorsal decubitus, and the clear note in the uppermost flank in the lateral position. Heart, lungs, and urine were normal.

*Treatment*:—*Injections of Koch's old tuberculin* (9th July).—0.25 c.c. of 1 in 1,000. The dose was gradually increased, and by 8th October he had twenty-two injections, the last being 1.5 c.c. of 1 in 10, with only a slight reaction.

The boy is now exceedingly well, and has gained in flesh and colour since he came into hospital. His belly is much softer, he has no pain or tenderness, and there is no fluid in the abdominal cavity. He has no diarrhoea, and no night sweats.

## II.—CASE OF ADDISON'S DISEASE TREATED BY INJECTIONS OF TUBERCULIN.

BY PROF. T. M'CALL ANDERSON.

H. P., æt. 31, was admitted to the Western Infirmary on 19th May, 1904, complaining of weakness and breathlessness on exertion, and discoloration of eighteen months' duration.

*Condition on admission*.—Patient complains of feeling tired, and of frontal headaches. She has severe pains in "the small of her back," has no appetite, and is constipated. Her skin is deeply pigmented, and she states that for some time her colour has been becoming increasingly dark. The buccal and conjunctival mucous membranes are pale, she is profoundly anæmic, and has fainted several times, but she is fairly well

nourished. Her weight is 7 st. 9 lb.; two years ago it was 8 st. 13 lb. Heart sounds are normal. There is a venous hum in the vessels of the neck. On auscultating the lungs, sonorous and sibilant ronchi are heard.

*Blood examination.*—Red blood corpuscles, 3,360,000 per cubic mm.; white blood corpuscles, 3,800 per cubic mm.; hæmoglobin, 45 per cent. The red corpuscles show great variation in colour. Their form is somewhat irregular, so that slight poikilocytosis may be said to exist, but there are no definite evidences of grave alteration of the blood, and pernicious anæmia may be excluded. The appearances are those of moderately severe secondary anæmia. The urine is normal.

*History of the case.*—Patient is married, and has five children alive, one of whom has enlarged glands in the neck. She has had irregularity of menstruation, and has had several abortions, but there are no symptoms of syphilis. She has been curetted for a blood-stained discharge, after which she improved greatly, but two years later again suffered from all the symptoms of a profound anæmia, aggravated by an abortion in August, 1902. From this date she became progressively worse. The only interest in her family history is that a brother died of "water on the brain."

*Tuberculin treatment.*—

		Maximum Temperature.
May	25—0·5 c.c., 1 in 1,000 old tuberculin,	96·6°
"	31—0·5 c.c., 1 in 1,000 "	99·4°
* June	3—1·0 c.c., 1 in 1,000 "	100·2°
"	7—1·0 c.c., 1 in 1,000 "	103·4°
"	11—1·0 c.c., 1 in 1,000 "	103·0°
"	19—1·0 c.c., 1 in 1,000 "	98·4°
"	23—1·0 c.c., 1 in 1,000 "	103·4°
July	4—1·0 c.c., 1 in 1,000 "	104·2°

\* Deep-seated pain in the loins.

Within the last fortnight there has been a noticeable change in colour; pigmentation has almost entirely disappeared.

*Blood examination.*—Red blood corpuscles, 3,330,000 per cubic mm.; white blood corpuscles, 4,400 per cubic mm.; hæmoglobin, 48 per cent. Poikilocytosis is less marked.

By 12th July she was feeling well, was able to be up and to help the nurses in making the beds, &c., and the discoloration had almost entirely disappeared. She therefore insisted upon leaving the hospital, to our great disappointment.

III.—CASES OF MOVABLE KIDNEY.

BY DR. DAVID NEWMAN.

Dr. Newman described two cases of movable kidney, which were published in our issue for February, 1905, at pp. 82, 90.

IV.—ACUTE FATAL PNEUMOCOCCIC PLEURISY, RESEMBLING CLINICALLY ACUTE LOBAR PNEUMONIA, WITH REMARKS UPON THE RELATIONSHIP OF PNEUMONIA TO THE PNEUMOCOCCUS.

BY DR. JOHN LINDSAY STEVEN.

Dr. Lindsay Steven's paper will be found as an original article at p. 321.

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MEETING III.—18TH NOVEMBER, 1904.

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*The President, DR. DAVID NEWMAN, in the Chair.*

I.—CASE OF CEPHALIC TETANUS FOLLOWING A CONTUSION WOUND OF THE OUTER CANTHUS.

BY DR. A. MAITLAND RAMSAY.

The case of tetanus which I bring before you to-night differs considerably from the ordinary type, chiefly in the distribution of the symptoms, which were, for the most part, localised in the facial muscles of the right side.

The patient was a woman, J. M., 23 years of age, who was on 21st September, 1904, sent by Dr. Thomas Dunlop, Thornhill, Dumfriesshire, to consult me at the Glasgow Ophthalmic Institution. Four days previously she had been struck on the right eye with a walking-stick, and on admission to the hospital was found to have a suppurating wound extending for about three-eighths of an inch outwards from the external canthus of the injured eye. There was no corneal injury, but there were extensive chemosis of the bulbar conjunctiva, which covered the cornea over its outer half, and ecchymosis of the lids and swelling extending over most of the right side of the face. The intraocular tension was



normal, the anterior chamber of natural depth, the pupil dilated and irresponsive to light, the fundus oculi could not be illuminated, and all perception of light was lost.

About three days after admission the patient began to complain of stiffness of the lower jaw, especially on the right side. As no maxillary injury could be detected, this at first did not attract much attention, and was attributed to the extensive swelling and bruising which involved the whole of the right side of the face. Though, however, the swelling gradually subsided, the stiffness became steadily worse, and by 28th September it was manifest that the condition was serious, and strongly suggestive of trismus. The patient could then open her mouth only on the left side, and the right corner drooped towards the chin. All the muscles on the right side of the face were paralysed, but owing to the injury and swelling it was difficult to determine the degree of the palsy of the orbicularis palpebrarum, and the labio-nasal fold was never completely obliterated. The occipito-frontalis was also involved, and the wrinkles on the left side of the face were much more marked than those on the right. On both sides the knee jerks were exaggerated, and ankle clonus was present.

On the following day there was complaint of stiffness of the right trapezius, and as fears were now entertained that the case would turn out to be one of general tetanus, Dr. Knox was called in consultation, and Dr. Campbell McClure was asked to prepare a culture of the discharge from the wound. Dr. Knox's examination revealed a sinus leading down to bare bone at the malar process of the superior maxilla, and the bacteriological investigation demonstrated the presence of the tetanus bacillus in large numbers. The injection of anti-tetanic serum was at once commenced, and for two days the conditions remained practically unchanged. On the evening of 1st October, however, while the eye was being douched and the sinus syringed, the patient had an attack of laryngeal spasm so severe while it lasted that it was feared she would die of suffocation. In a few minutes, however, the muscles relaxed, but shortly afterwards, while the girl was taking a drink, she was suddenly seized with slight spasm of the pharynx, similar to that which occurs in hydrophobia.

The serum injections were continued and chloral prescribed in large doses, and on the following day the tonic contraction of the muscles of mastication was distinctly less, although there was again a tendency to the occurrence of spasmodic dyspnoea when the wound was being dressed. The attack

was not, however, nearly so severe as that of the previous evening, and it never again recurred. In fact, from this time onward there was steady improvement, and after 3rd October the injections were intermitted for six days. During sleep the muscles relaxed so much that the mouth remained open, but on waking there were still occasional spasmodic contractions of the muscles of mastication, and several times the patient bit her tongue severely. As the discharge was not escaping freely from the sinus at the right outer canthus, Dr. Knox made an opening through the skin, and inserted a drainage-tube. After the beginning of November there was steady progress, and there is now (18th November) little difference between the two sides of the face, although the right occipito-frontalis does not act so well as the left. There is still slight discharge from the wound, but the conjunctiva is almost quite clear, and a few exuberant granulations at the outer canthus have been snipped off. The electrical reaction of the facial muscles on the right side is normal, but the response to both galvanic and faradic stimulation is more sluggish than on the left. With the right eye the patient can determine hand movements at 6 feet, and count fingers at 2 feet; but as she is unable to detect the discs on the test square used with the perimeter, the field of vision cannot be satisfactorily mapped out. Ophthalmoscopic examination shows the media to be perfectly transparent, and while little abnormal is to be detected in the appearance of the optic disc and retinal blood-vessels, a rupture of the choroid is seen to extend downwards and inwards in the region of the macula.

Considering the large percentage of these cases that prove fatal such a complete recovery is very gratifying. In this instance it is probably in a large measure to be attributed to the use of the anti-tetanic serum, which was administered seven times to a total amount of about 150 cubic centimetres. Distinct benefit followed every injection after the third. The patient was throughout kept quiet, well nourished (careful attention being paid to the action of the bowels), and chloral in large doses was given to secure rest and sleep, the total amount of this drug used between 29th September and the beginning of November being 3,000 grains. For the first sixteen days 150 grains were taken every twenty-four hours. The patient's strength was well maintained throughout, the pulse averaged about 90, and temperature was always normal.

I am indebted to my house surgeons—Dr. Young and Dr. Hutton—for the careful notes they have made of this case.

## II.—INTERSTITIAL KERATITIS IN ITS VARIOUS STAGES.

BY DR. JOHN ROWAN.

Dr. Rowan showed a series of cases illustrating interstitial keratitis in its various stages, from the acute, where the cornea is converted into an apparently hopeless opaque mass, till the traces left are so slight that a minute examination is necessary to detect their presence. He shortly described the cases, and made some remarks on the early diagnosis, prognosis, and treatment. He emphasised the fact that though apparently there are often no traces left, yet by careful examination it is always possible to tell when a patient has suffered from this disease. This fact has sometimes been disputed, but in observations extending now over twelve years he has always, upon careful examination, found evidences of past disease—a point that is often of considerable importance in settling the question as to whether a patient has or has not congenital syphilis.

Dr. Rowan also showed a girl of 8 years with a primary chancre of the lower lid; a stereoscopic photograph of another patient with a primary chancre on the upper lip and a well-marked rash; and several patients with eye symptoms the result of acquired syphilis.

## III.—A SISTER AND BROTHER SUFFERING FROM CENTRAL SCOTOMATOUS ATROPHY.

BY DR. H. WRIGHT THOMSON.

They are the third and sixth members of a family of seventeen, of whom the eldest is also similarly affected. A cousin on the maternal side is believed to have had the same trouble, but no other evidence of family tendency is discoverable.

The father, aged 45, sees well enough to drive a locomotive. The mother, aged 46, has  $V = \frac{5}{6}$ .

Alexander (the eldest of family; not shown) is now 22 years of age. His sight began to fail when he was 17. He was then a railway pointsman, but became unfit for that. He is now a byreman.

Lizzie, æt. 20, became affected when 8 years of age. In each eye there is present a large central absolute scotoma. In consequence of this there is inability to fix objects, and both eyes diverge from the middle line. Vision is very

defective, but it has been stationary for many years, and she is quite able to do housework.

Mathew, æt. 16, was first seen two years ago, when visual difficulty was of two months' duration, and had reached its maximum. There was then found an absolute central defect in each field of vision, and macular fixation was already abandoned. The fields of vision were, on account of this, difficult to estimate, but they seemed uncontracted. The optic discs were very pale.

*Present condition.*—Central scotoma still present, and when asked to fix an object an eccentric part of the retina is used, and the eye seems to look past it. The right eye has benefited by practice, and whereas two years ago its vision was less than  $\frac{6}{80}$ , it is now  $\frac{6}{10}$ . The left eye has not similarly benefited, and, indeed, is divergent. The fields of vision remain uncontracted.

Dr. Thomson also showed—

Case of epithelioma at corneo-scleral margin, in a seaman, aged 60. No glandular involvement; duration, six months.

Case of paresis of external rectus following an attack of tonsillitis. There had been several apparently similar tonsillar attacks. No specific or rheumatic history.

Case of ptosis, caused by an extensive wound above and parallel to the eyebrow, relieved by Mules' operation.

Case of locomotor ataxia in which dimness of vision was the symptom which led the patient to seek advice.

#### IV.—SPECIMENS.

BY DR. HUGH WALKER.

1. Shrinking eyeball. The patient received a wound from a chip of steel, which caused a perforating wound of the cornea. The eye at first seemed to be doing well, but iritis developed, and enucleation was performed four months after the accident.

2. Non-pigmented sarcoma of choroid.

3. Two shrivelled eyeballs, the result of ophthalmia.

4. Panophthalmitis.

5. Detachment of retina.

6. Melanotic sarcoma of choroid.

7. Siderosis bulbi. This evidently contains a piece of iron. The accident took place before the value of the  $x$ -rays for diagnosing the presence of metallic bodies was known.

8. Deeply pigmented sarcoma of choroid.

9. Sarcomatous epibulbar tumour.
10. Anterior staphyloma.
11. Penetrating wound of eyeball. The cornea and ciliary region were ruptured by a chip of steel. On admission, the eye was soft owing to escape of aqueous and vitreous fluids. The chip was found and removed; the anterior chamber irrigated; and the prolapsing iris excised. The eyeball shrivelled, and was enucleated two weeks later.
12. Tumour of optic nerve.
13. Bone in choroid.
14. Epithelioma of eyelid.
15. Ciliary staphyloma (choroiditis).
16. Calcareous lens.
17. Paraffin removed from orbit six months after insertion.
18. Knife-wound of cornea.
19. Burn and wound of cornea.
20. Detachment of retina; bone in choroid.
21. Extensive wound of cornea.
22. Buphthalmos.
23. Cyclitis. Calcareous deposit in ciliary region. Result of an injury ten years ago.

V.—DEMONSTRATION OF THE MICRO-ORGANISMS FOUND  
IN THE CONJUNCTIVAL SAC.

BY DR. CAMPBELL M'CLURE.

Dr. Campbell M'Clure showed cultures, obtained from conjunctival sac, of pneumococcus, pseudo-diphtheria bacillus, diphtheria bacillus, staphylococcus albus, bacillus coli communis, and tetanus bacillus.

VI.—DEMONSTRATION OF OPTICAL INSTRUMENTS.

BY DR. JOHN GILCHRIST.

1. Worth's amblyoscope (new means of lighting), to educate the fusion sense in the treatment of strabismus.
2. Ramsay's adjustable stereoscope, to educate the fusion sense in the treatment of strabismus. The intensity of illumination of either picture can be regulated by means of a bridge resistance.
3. Worth-Black deviometer, for estimating the degree of strabismus.

4. Electric apparatus, for applying heat to the eye.
  5. Ramsay's spectroscope, for testing colour sense by means of a spectrum produced by a grating.
  6. Chambers' ophthalmometer, for estimating the corneal astigmatism.
  7. Corneal binocular microscope gives a magnified view of the cornea, iris, and anterior surface of the lens.
  8. Skeel's self-registering perimeter, for measuring the field of vision, the angle of a squint, &c.
  9. Leiter's tube, for applying cold to the eye.
  10. Geneva ophthalmoscope, for the examination of the fundus without the necessity of a dark room.
  11. Geneva retinoscope, for the objective estimation of the refraction of the eye.
  12. Thorner's demonstration ophthalmoscope, gives an enlarged view of the fundus oculi without reflex, consequently, this instrument has made it possible to photograph the back of the eye.
  13. Steven's phorometer.
  14. Foster's photometer.
  15. Priestley Smith's heteroscope.
  16. Brooksbank's portable perimeter, for measuring the field of vision.
  17. Asche's perimeter.
  18. Steven's tropometer, designed to measure the various rotations of the eyes about the point known as the "centre of rotation."
  19. A lantern designed to project opaque objects on a screen, and specially modified to show plates, specimens, and models, and to demonstrate the technique of operations.
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## GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1904-1905.

MEETING III (*continued*).—12TH DECEMBER, 1904.*The President, PROF. ROBERT MUIR, in the Chair.*

## VI.—A CENTRAL TUMOUR OF THE TIBIA: MALIGNANT ANGIOMA.

BY DR. J. CRAWFORD RENTON AND DR. J. H. TEACHER.

*Clinical history by Dr. Renton.*—The patient was a man of 65 years of age, who was sent to Dr. Renton by Dr. Archibald Young, who saw him in the Dispensary of the Western Infirmary, and Dr. Reid, of Milngavie.

When first seen, the tumour had been in existence for about eighteen months. It grew very slowly, and the patient objected to any operative interference, as it gave him very little trouble. However, six months after the first examination his leg broke, and then he consented to amputation. The operation was performed in the Western Infirmary, and the patient made an excellent recovery. The case illustrates the slow growth of central sarcomata. A skiagram was shown, which demonstrated very clearly the replacement of the osseous shaft of the tibia by the soft tumour tissue.

*Pathological report by Dr. Teacher.*—The tumour is a spindle-shaped swelling which occupies the upper two-thirds of the diaphysis of the tibia. The tumour is not very large, its greatest diameter being not more than double that of the unaltered shaft of the bone. It appears to be a tumour of central origin. It is enclosed in a firm fibrous sheath, apparently thickened periosteum, in which plates and nodules of bone of varying size can be felt. The tumour tissue is of firm, fleshy consistence, and spicules of bone occur here and there throughout it. It is of a pale pink colour for the most part, but in places it is of a red colour, as if highly vascular. On microscopic examination, it is found to be not a sarcoma, but a much more interesting growth, albeit of allied nature.

For the most part it consists of two types of tissue, which.

present a striking contrast (Figs. 1 and 2, pp. 370, 371). The first consists of a mass of cells, which is more or less distinctly divided into lobules by thin-walled vessels and a small amount of connective tissue stroma, in which the vessels run. The cells are of very uniform size, polygonal in shape, with small vesicular nuclei and relatively large, clear, transparent bodies. They are closely packed together without intervening fibrous stroma, except close to the vessels, where (especially around the larger vessels) there is a certain amount of fibrous tissue, which passes a short distance outwards among the tumour cells. There is no clear demarcation of the edge of the cell mass from the connective tissue. Rather it appears as if the vessel wall merged gradually into the cellular tissue, which looks as if it might be a proliferation of the vessel wall—such a growth as is termed perithelioma.

The second type of tissue consists for the most part of wide alveoli bound together by a very scanty fibrous stroma, in which a few thin-walled blood-vessels run. The alveoli are lined by clear cubical cells with relatively small vesicular nuclei set upon the above-mentioned stroma as basement membranes. The alveoli are filled with blood, which presents no sign of coagulation or degenerative changes, except in the case of a few large masses, about which the tumour tissue is altered and degenerated, and which are obviously extravasations. The cells lining the alveoli resemble closely those forming the masses of the first type of tissue. A fair number of karyokinetic figures are to be seen both in the cell masses and in the linings of the alveoli.

The origin of these two structures was readily traced to one and the same mother tissue. The periosteal sheath of the tumour is a fairly vascular, dense, fibrous membrane. Inside this is found, in some parts, fully developed tissue of one or other of the above types, while in other parts is found a highly cellular tissue having the characteristics of young connective tissue. The elements of this tissue are, for the most part, round cells: there are few spindle-cells. Capillaries and vessels of slightly larger size are numerous, and their walls appear to constitute the greater part of the fibrous framework of the tissue. The bodies of the round cells are, for the most part, indistinct; the nuclei, as in ordinary granulation tissue, vary in size and in chromatin contents within fairly wide limits. The tissue does not present any resemblance to red bone marrow. Here and there the cells between the capillaries are seen to be enlarged and to present definite cell bodies, which are very clear, as if swollen by some



œdematous or degenerative change; but the alteration is evidently not of this nature, but is an active process of development. In a more advanced stage they are still larger and become closely packed, and their outlines become very distinct. Karyokinetic figures are fairly numerous.

Where great numbers of these swollen cells have been formed between the vessels, tissue of the first type is the result.

The formation of the second type was more difficult to trace. Among the swollen cells capillaries are seen. In



FIG. 1.

addition, blood is seen in small masses, in some cases lying in a well-defined space among well-preserved large clear cells, in other instances in cavities which appear to have been formed by breaking down of the central elements of a mass of the large clear cells. Whichever relationship to the cells the blood may present, it is apparent that the small spaces develop eventually into the comparatively large alveoli lined by low, cubical, epithelium-like, clear cells. Continuity between capillaries and the commencement of the blood-filled alveoli appeared to be satisfactorily traced in

a few instances. The condition cannot be described as extravasation into alveoli. The blood does not show degenerative changes nor coagulation. Hæmorrhages there are in the tumour, but the appearances are quite different. Moreover, the alveoli are growing structures, as is shown by the occurrence of karyokinetic figures in the lining cells.

The formation of the blood-containing alveoli presents a strong resemblance to one of the described modes of origin of embryonic blood-vessels, viz., that they are spaces hollowed



FIG. 2.

out in originally solid columns of mesenchyme (embryonic connective tissue) cells. On the other hand, budding of the endothelium of capillaries was not recognised; but a few of the small alveoli near the edge of the tumour contained what appeared to be the remains of endothelial lining, as if the cavity had been formed by growth into the cell mass of an endothelial bud. This was, however, exceptional; as a rule, the smallest alveoli showed the blood in direct contact with the large clear cells. Nothing resembling new blood-formation was observed.

Another type of tissue apparently allied to the second type is also found. In this, considerable masses of the large clear cells occupy the spaces of a scanty fibrous meshwork. The central cells of many of the masses appear shrunken and detached from one another, and the outermost layer presents a regular epithelium-like character. The tissue, in fact, is identical with that of the second type, except that the separated shrunken cells fill the place of the blood in the alveoli. Blood-vessels are few in number in this tissue, and obviously have failed to connect with the spaces as they have done in the case of the tissue of the second type.

The different forms of tissue do not intermingle to any extent. In all the sections examined, one or other type predominated.

*Conclusion.*—The tumour appears to be of connective tissue (mesenchymatous) origin, and to be related specially to these elements of the mesenchyme which form the blood-vessels. It is a tumour related to the sarcomata, but decidedly not a sarcoma. It cannot be called an endothelioma, for the tissue which forms both the cell masses clustering round the vessels, and the lining of the blood-filled alveoli, develops between the blood-vessels. The somewhat vague term perithelioma is suitable to one part only of the growth. In view of all the facts, it is perhaps best described as malignant angioma of bone.

The case was commented upon by *Professor Muir* and *Mr. Maylard*, and by *Dr. Arch. Young*, who called attention to the clinical fact that the tumour was visibly and palpably pulsatile.

#### VII.—PERITYPHLITIS IN RELATION TO CARCINOMA AND FOREIGN BODIES.

By DR. H. RUTHERFURD.

Dr. Rutherford's paper will be found as an original article in our issue for April, p. 266.

## GLASGOW EASTERN MEDICAL SOCIETY.

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SESSION 1904-1905.

MEETING V.—7TH DECEMBER, 1904.

THE Society met in the Glasgow Parish Council's Eastern District Hospital, 253 Duke Street. A demonstration was given by Dr. J. M'C. Johnston, the Medical Superintendent, who exhibited the plans of the hospital, and gave a short account of the general construction and arrangement of the buildings.

Under the guidance of Dr. Johnston and Dr. Garey, the visitors were conducted over the place, beginning with the kitchen, where the latest cooking appliances were examined, and passing on to the laundry and storeroom. The isolation block was then visited, and also the probationers' wards. The maternity block was then inspected, and thereafter the operating theatre and surgical and medical wards were visited. The tour of inspection concluded with a visit to the block for mental diseases, the mortuary, the pathological room, and the outdoor dispensary.

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MEETING VI.—21ST DECEMBER, 1904.

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*The President, DR. JAMES DUNLOP, in the Chair.*

## CLINICAL NIGHT.

I. DR. JAMES DUNLOP showed a case of sarcoma of the head of the humerus, in a woman, æt. 54. The patient stated that for the last ten years she suffered from pain in the left shoulder. She had gradually felt her jacket get too tight, and while in bed she had to lie on the affected side. The left shoulder was greatly enlarged and globular. Over the anterior aspect of the head of the humerus a distinct sense of fluctuation was made out, as if the tumour had burst through

its capsule. The veins were considerably enlarged over the swelling. There was free and painless movement in the joint.

II. DR. DUNCAN MACARTNEY showed—

1. *Case of cheloid in a man, æt. 55.*—This patient, a slater, was admitted to the Cancer Hospital on 18th August, 1904, complaining of a raised wheal along the upper edge of the sternum, about 2 inches long and a quarter of an inch wide. There was no history of scar or injury. Regarding cheloid as a disease of a scar, Dr. Macartney operated on 19th August in order to remove the scar. The wound healed by first intention, the suture marks were well seen, the cheloid was still prominent, and showed a tendency to ulcerate. The man returned to hospital on 29th October. The treatment now was by high-frequency currents, ten minutes once a week. No improvement had been noted as yet, and if no benefit was derived from this treatment, he proposed to operate again.

2. *Case of gumma of the liver treated by operation.*—Patient was a man, æt. 53, and was admitted to hospital on 12th December, 1902, complaining of discharge from a sinus in the back, which had been preceded by dull pain. His doctor noticed serum oozing from the sinus, and, as patient was losing flesh, the question of malignancy was raised. Dr. Macartney opened up the sinus, exposed a rib, scraped, and got away a lot of chamois-leather-like material. He then got into liver tissue, which he found to be gummatous. There was no involvement of the pleura or diaphragm. Patient remained in hospital for nine months. The wound healed in great measure, and he went home fairly well, being treated thereafter as an outdoor patient. The discharge was much less, the wound was smaller, and the man had improved in every way. He was put on iodide of potassium, and had gained 1 stone in weight.

3. *Case of epithelioma of the hand.*—Patient, a man, æt. 33, was admitted to hospital on 1st October, 1904, complaining of a large malignant-looking tumour of the right hand. He showed evidence of venereal disease in a number of ulcerating gummata over different parts of the body. The tumour on the hand began as a small wart on the palm, at the root of the forefinger. This never healed, and he attended various doctors. He went to the Western Infirmary and had the part excised on three occasions. He had been unable to work for more than a year, and had been subject to epileptic fits since childhood. (He got a knock on the head when about 4 years.)

He had a number of severe attacks after the operation in hospital. He was rather unintelligent, and slow in answering. His recollection of dates and details of his ailments was very uncertain. Dr. Macartney amputated at the wrist on 8th October, and the wound healed very quickly. Patient was put on No. 3 mixture, and was dismissed well on 5th November. Since then, however, he died at 33 years of age. Two points were noteworthy: (1) this epithelioma occurring in a young person; and (2) the patient being a subject of tertiary syphilis.

4. Some excellent photographs of malignant and other tumours were demonstrated to the members. One case of atrophic scirrhus, in a woman, æt. 73, was shown, which began as a case of Paget's disease of the nipple.

### III. DR. JOHN PATRICK showed the following cases:—

1. *Paraffin injection for nasal deformity resulting from injury in a girl, æt. 17.*—The details of the operation were given by Dr. Patrick, who said that the patient left the theatre with a very shapely nose; but a few weeks later he found it had assumed a considerably broader aspect. The chief mistake made in the operation, he thought, was the injection of too much paraffin; it was better to inject what appears at the time to be too little, and rather to undercorrect the deformity. The use of the ring of celloidin painted round the area to be injected, as recommended by Dr. Walker Downie, was good.

2. *Left coxa vara in a girl exhibiting no other rachitic signs.*—Eight years ago, she was said to have fallen from the roof of a shed on the top of drain pipes, a height of nearly a storey. The only result of that was a scalp wound. When 8 years old she was noticed to lean to one side slightly, and in a few months this became a quite decided limp. Examination showed lameness due chiefly to shortness of the left leg. There was no pain, and the patient was emphatic in saying that there had never been pain. Movements of the joint were limited only in abduction and internal rotation, and these not to a very marked degree. The great trochanter was higher on the affected side than on the other. Behind it there was a marked hollow on the hip, in contrast with a fulness on the other side. The tip of the great trochanter was about  $1\frac{1}{4}$  inch above Nelaton's line. A Röntgen ray photograph, taken by Dr. J. R. Riddell, showed the deformity well. The neck of the femur was at right angles to the shaft. The neck was considerably shortened, so that the head almost

touched the lesser trochanter. The condition rather seemed as if there were no neck, and a very large irregular head. This appearance might be due to curving of the neck of the femur in an antero-posterior direction, so that the articular surface of the head looked forwards, and the concavity of the femoral neck was also towards the front. The great trochanter stood out very prominently. The short stumpy neck of the femur was sharply delineated from the head by the epiphyseal line. Dr. Patrick could hardly believe that this case, or any case, could be one of rickets limited to the upper epiphysis of the femur. As to treatment, osteotomy of the neck of the femur had been suggested, but he did not think that any operation would benefit the girl, and he had simply recommended wearing a high-heeled boot on that side.

3. Notes were read on a case of varicose veins of the anterior abdominal wall, a sequel of post-typhoid thrombosis of the left iliac vein; to relieve pain an operation had been performed with success.

4. *Three cases of gangrene of fingers following the application of carbolic acid solutions.*—The first case was a young girl, whose left forefinger was injured. The finger was dressed by a porter in the work, who used a solution of lysol, the strength of which was not accurately measured. This was applied as a wet dressing; and when Dr. Patrick saw the finger a few days later, it was black up to the second joint. That the gangrene was a direct result of the injury alone was hardly possible, as there was no fracture of the bones, and only a limited laceration near the root of the nail.

The second case was a girl, admitted to the Glasgow Royal Infirmary, with gangrene of the terminal two-thirds of her right thumb. She had suffered from slight suppuration at the root of the nail, and the only dressing applied was carbolic oil. It was quite reasonable to suppose that the carbolic oil used in this case was too strong, or that the carbolic acid was not intimately mixed with the oil, or not quite dissolved.

The third case was a young lady, whose circulation was known to be feeble, as she suffered almost constantly from cold hands and feet, and whose general health was markedly deteriorated. She had suffered for some days from slight suppuration at the root of the nail of her right middle finger. A trained nurse applied a wet dressing of 1 in 40 carbolic acid solution. This remained on overnight. Next day the finger was still throbbing. It looked swollen, and of a dull red colour up to the middle joint. There was loss of sensation,

and a distinct leathery feeling of the skin. This was considered to be due to an increase in the inflammatory condition, and another dressing was applied by the nurse, this time 1 in 30. In about forty-five minutes the finger became so hot and painful that the dressing was removed, and the finger was then seen to be of a dull livid colour, intermingled with white. Dr. Patrick saw the finger about six hours later, and it was manifestly dead, of a whitish-grey colour, the part involved corresponding exactly to the part covered by the carbolised lint, namely, the two terminal phalanges. A dry dressing was applied, and the whole limb wrapped in cotton wool. The finger became rapidly black, and a line of demarcation formed. A fortnight after the first dressing, the finger was amputated.

In the discussion which followed the demonstration of cases,

*Dr. John Patrick* said he had seen the patient with cheloid at the Glasgow Royal Infirmary Dispensary. The man, at that time, said he had suffered from a burn. He recommended *no* operation, as cheloid returned after operation for its removal.

*Dr. Macartney* said he would remove the cheloid scar again and again, as he could well remember a case which was under the care of his old chief, Dr. Alex. Patterson, where the cheloid scar was removed, not once, but four or five times, from the neck, and the patient had now a perfectly smooth skin over what formerly was cheloid scar.

*Dr. Service* referred to the cases of gangrene of the fingers from carbolic solutions. He doubted if carbolic acid had anything to do with the cases, and said it was well known that this condition might arise from the administration of ergot to debilitated persons; and in all Dr. Patrick's cases there had been suppuration, and in one case debility. Personally, he had seen blackening of fingers and toes in cases of suppuration.

*Dr. Arch. Young* spoke of the case of coxa vara, and said he was not able to agree with the diagnosis here. The cause of coxa vara had not yet been arrived at. There were, however, certain distinct features of the hip, femur, neck, and head of the trochanter in that condition. The only feature in Dr. Patrick's case was elevation of the trochanter. There was no "scissors gait," and there was quite good abduction, without much moving of the pelvis. Lame hip was not to be regarded as equivalent to coxa vara. He suggested that the case might be one of an atrophic condition of the femur, with diminution of the pelvic girdle. With reference to the



gangrene from carbolic acid dressings, it was possibly not due to the dressing, but to large quantities of virulent organisms which had brought about the injury.

*Dr. J. W. Findlay* did not view with favour the operation in the case of post-typhoid thrombosis, and was at a loss to understand why *Dr. Patrick* should have ligatured these open channels. If the leg was enlarged, there was a contra-indication to the operation. In fact, the circulation was being restored by the tunnelling of the femoral veins, and the pain referred to would have soon disappeared.

*Dr. Jas. Dunlop* referred to the case of a child whose arm had been treated with a dressing of pure lysol by its parents, previous to the arrival of their medical attendant. The child collapsed and died in convulsions as a result, evidently through absorption from the application. There was no local sloughing.

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#### MEETING VII.—18TH JANUARY, 1905.

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*The President, DR. JAMES DUNLOP, in the Chair.*

The Society met in the Sick Children's Hospital Dispensary, when *Dr. Jas. H. Nicoll* gave a surgical demonstration as under:—

1. Card demonstration of stereoscopic photographs bearing on the surgical affections of childhood.
2. Card demonstration of calculi removed from various situations.
3. Card demonstration of vermiform appendices removed from abnormal sites.
4. Lantern demonstration, with exhibition of cases, illustrative of surgical affections of childhood:—(a) Dermoids, and allied conditions, including harelip, &c. (b) Hernia of the ovary in infants. (c) Birth fracture of the skull.

Not the least interesting part of the demonstration was at the point where *Dr. Nicoll* went fully into the development of the fœtus, and traced out by diagrams how various abnormalities arose, and how it was possible in many cases to remedy or modify these by surgical methods. These methods were then described, and illustrated by the cases of patients shown after operation.

GLASGOW NORTHERN MEDICAL SOCIETY.

A MEETING of the Society was held on 28th March in the Royal Infirmary, Dr. John Ritchie in the chair.

Dr. JAMES W. ALLAN showed a series of cases.

1. A case of aneurysm of the aortic arch in a soldier, æt. 29, who had had syphilis and malaria, and been addicted to alcohol. Swelling in the second and third interspaces of the right side noticed three months ago. Patient also suffered from breathlessness and cough, pain over the tumour and right shoulder. The tumour was distinctly pulsatile. Heart seemed normal. There had been no beneficial result from treatment.

2. A sailor, complaining of cough and spit with hæmoptysis, and pain in right arm. No palpable tumour. Heart sounds normal. Area of dulness over second and third right interspaces with deficiency of respiratory murmur on right side. With the screen the tumour was seen to be pulsating, thus confirming diagnosis of aneurysm.

3. Dr. Allan next showed brains from cases of cerebral tumour, and gave a short clinical history of each.

4. Two cases of Graves' disease, in which treatment by electricity had not been of much value.

5. A case of Raynaud's disease.

6. A case of progressive pernicious anæmia with history of dyspepsia for twelve years. Had been off and on under treatment for aneurysm for two years. Best results had been got from arsenic and bone-marrow. Dr. Henderson showed a very fine series of blood preparations from this case, and Dr. Ballantyne demonstrated the ophthalmoscopic appearances.

At the conclusion of the meeting, the Chairman proposed a vote of thanks to Drs. Allan, Henderson, Ballantyne, and Thom.

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## REVIEWS.

*Abdominal Pain: Its Causes and Clinical Significance.*

By A. ERNEST MAYLARD, M.B., B.S.Lond. London: J. & A. Churchill. 1905.

To devote a book to the description and analysis of a single symptom is a somewhat hazardous undertaking, and Mr. Maylard shows, both in the preface and introductory chapter to this volume, that he is not ignorant of the difficulties which wait on such an enterprise. He has, indeed, found it necessary, in order to give length and substance to the printed matter, to add nearly a hundred pages which have nothing to do with the title of the book. These treat of certain practical points in the operation of laparotomy, such as the sterilisation of the operator's hands and the patient's skin; ligatures and sutures; abdominal incisions; and the after-treatment in abdominal operations. To our minds, they form the most important and valuable pages in the volume, and would certainly have justified the use of a more comprehensive title for it, or, at least, a mention on the title page of the subjects discussed in them.

Of all the symptoms on which the physician or surgeon has to depend in arriving at a diagnosis in abdominal cases, pain is the most variable and least reliable. This depends to some extent on the individual capacity for bearing pain, or what we may call the "personal sensitiveness"; in some measure, also, on the fact that pain may be "referred" to a part at a distance from the affected organ, or even to the other side of the body; and in part to the deep-seated position of the organs, which results in many organs or tissues being capable of causing pain in a given area. That Mr. Maylard has not succeeded in dispelling the fog in which the surgeon finds himself when he attempts to estimate the significance of abdominal pain is not to be wondered at, but we fear it will be a cause of disappointment to many readers. He has certainly given us a very careful study of the subject, and has brought to the elucidation of it an excellent knowledge of anatomy, an extensive search into medical literature, and a wide practical acquaintance with both abdominal disease and abdominal operations. It is, however, questionable whether an enquirer will get

any material assistance in his doubts as to the origin of a sub-acute pain in the antero-lateral region of the abdomen by the knowledge derived from the table on page 157, that there are more than a hundred conditions which may cause it.

The chapter on the sterilisation of the operator's hands and the patient's skin gives clearly and succinctly what is the experience and practice of probably the majority of surgeons, the only novelty being the use of hydrated lanoline oleate of mercury (20 per cent) as a preliminary dressing, with a view to the sterilisation, both of the skin and the subcutaneous tissues. Mr. Maylard speaks highly of this method, but he admits that if left in contact with the skin more than forty-eight hours (and in some persons for a less period), the ointment gives rise to a crop of pseudo-pustules.

The author's discussion of the lines of incision in abdominal operations is important, and he draws from so wide an experience that we cannot but admit the value of his conclusions. He has a strong predilection for transverse or oblique incisions, instead of the vertical median section so universally employed. In this respect, he is following the lead given by Kocher many years ago, although the latter surgeon carried out the practice chiefly in the neck. On referring, however, to Kocher's *Text-Book of Operative Surgery* (English edition, translated by Stiles, 1895), the following comments will be found (p. 126):—"Besides the median incision, the only really rational incisions which have regard to the course of the nerves are the *transverse* or *slightly oblique incisions* placed parallel to the nerves. It is true that such transverse incisions divide the three broad abdominal muscles, but the nerves lying between the individual muscles . . . can be pushed aside. As regards the rectus itself, a transverse incision through it does less injury than a longitudinal one at its outer edge, because the motor nerves remain intact, and an artificial tendinous intersection is all that is produced, so that the muscle contracts as before. With transverse incisions, however, the superior and inferior epigastric arteries are divided and must be ligatured." Mr. Maylard is able to show that in many cases the rectus muscles can be pulled aside, under which circumstances the arteries will also escape division, and we are satisfied his experience justifies a more extended use of transverse abdominal incisions.

We are pleased to find Mr. Maylard placing before the profession his investigations and conclusions in a department of surgery which he has made so peculiarly his own. He

invariably writes with clearness and precision, so that there is no doubt as to his convictions, and he never fails to give the grounds on which his conclusions are based.

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*The Surgery of the Diseases of the Appendix Vermiformis, and their Complications.* By W. H. BATTLE, F.R.C.S., and E. M. CORNER, M.B., F.R.C.S. London: Constable & Co. 1904.

THE method in which the authors of this book put their matter before the reader, while somewhat unusual, gives us a series of clinical word-pictures. These are well worthy of being re-read, and will be found most valuable. There is no laying down of hard-and-fast lines or pinning of one's faith to individual signs, and the outcome is that there is food for the thinking man. The size of the book necessitates the introductory paragraphs on the anatomy and physiology of the appendix being somewhat thin; but the main theme, viz., appendicitis, is carefully expounded. As to the latter, however, we must confess that our limited experience of the authors' incision has not aroused our enthusiasm for it; we also question the necessity for the use of the clamp in the removal of the offending organ. Our function is not to magnify defects at the expense of so much that is good; but we feel constrained to accuse "adhæSIONS" and "abdomina" as smacking of pedantry.

We commend the volume to our readers, as we feel sure that it will repay the time spent in its perusal.

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*Practical Nursing.* By ISLA STEWART and HERBERT E. CUFF, M.D. New Edition. Edinburgh and London: William Blackwood & Sons. 1904.

OF the making and remaking of books of this kind there appears to be no end, and the reading of them with a view to review (pardon the tautology), is an occasional weariness. The present volume, however, is an exception to the usual run of manual, being based on experience, and taking proportional and reasonable views regarding the environment of the patient, whether in an hospital or a private house, and also the inter-relations of the nurse, the patient, and the medical

attendant. The book contains thirty-one chapters, the first six relating to the general essentials and duties of a nurse; the second six treating of diet, bathing, and syringing; the next three chapters bearing on medicines, nursing, the management of sick children, and disinfection; while seven further chapters point out to the nurse her work in a room with an enteric patient, and with another afflicted with a respiratory or other disease. The remaining nine chapters refer to ophthalmic and gynæcological nursing, and the management of such surgical cases as burns and scalds, fractures, injured joints, ulcers, and some emergencies. This is a heavy list of subjects, and makes the volume a miniature handbook of general medical practice.

As diagnosis and treatment are not forgotten, such as occur in the discussion of appendicitis and chorea, the sensible nurse who studies this book may become a valuable aid to the doctor in intelligently carrying out treatment. This knowledge on the part of the nurse, when she refrains from making suggestions in presence of the patient, is right enough and quite desirable (page 10). The parts of the book bearing specially on her own work are very practical, and tersely and clearly written. We have seldom seen in the compass of 430 pages so many useful hints and suggestions on the management of the sick and injured placed at the disposal of the nursing profession and young practitioners of medicine. The printing and binding are creditable to the Messrs. Blackwood.

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*Obstetrics for Nurses.* By JOSEPH B. DE LEE, M.D.  
London: W. B. Saunders & Co. 1904.

LIKE most of the recently published American books, this one is beautifully illustrated. One unusual illustration is a photograph of Ignatz Semmelweiss.

For nurses the book will be of use, but for midwives it will be of no use. The sections dealing with the care of the mother and child are very full, but the mechanism of labour is left severely alone. Again, several pages are devoted to extra-uterine pregnancy, while the important subject of antepartum hæmorrhage is discussed in a page, and of abortions in ten lines.

There is a very full glossary at the end of the book, of twenty-five double-column pages. As to its necessity there can be no doubt, when we find such expressions as "abactus

venter," "ablactation," "abortifacient," "anemoscope," "borborygmus," "coprostasis," "dystocia," "emprosthodonus," "incontinentia paradoxa," "ischuria paradoxa," "pyromania," freely scattered throughout the text.

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*Lectures on Massage and Electricity in the Treatment of Disease.* By THOMAS STRETCH DOWSE, M.D., F.R.C.P.E. Fourth Edition. Bristol: John Wright & Co. 1903.

*A Manual for Students of Massage.* By MARY ANNE ELLISON. Second Edition. Revised by GULIELMA MANLEY. London: Baillière, Tindall & Cox. 1904.

*Chronic Headache and its Treatment by Massage.* By GUSTAF NORSTRÖM, M.D. New York and London: G. E. Stechert. 1903.

OF these three works on massage, two have been well known to us, as also to the rest of the medical profession, for several years past, in the form of their previous editions. And of them we have therefore little to say, otherwise than to endorse the favourable judgment which has demanded for each a new edition. Dr. Dowse's book still remains a thoughtful and most suggestive guide to the rational use of massage and electricity in the treatment of disease; and with its appendix on Röntgen rays, high-frequency currents, phototherapy, &c., it may be pronounced as being very complete and quite up to date.

Miss Ellison's work is of quite a different character, at least as regards the subject matter, for it is very elementary, and gives little more than an epitome of the essentials in the study of massage. But as such it is excellent, and one can confidently recommend it to nurses wishing to study this branch of their profession.

The third publication should, perhaps, be called a pamphlet rather than a book, as its limits and general characters suggest the former rather than the latter term. Its chief purpose seems to be to prove that in a considerable proportion of cases of headache the lesion is of the nature of an inflammatory deposit in the cranial insertions of certain of the muscles of the neck. This lesion is essentially a myositis, and the exudation produced, by pressing on the sensory nerves, is supposed to give rise to the pain complained of. Sometimes the inflammation may spread to the nerve sheath, resulting in

definite perineuritis. In either case, the treatment the author advocates is that, by means of massage, one should try to dissipate the inflammatory exudation, and so remove the cause of the disease. Some fourteen cases are recorded as illustrating the method of treatment, and according to the author's showing, the results are most encouraging.

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*Human Histology.* Saunders' Medical Hand Atlases.  
London: W. B. Saunders & Co. 1903.

THIS is an authorised translation of an original German work by Sobotta, of Würzburg, and is edited by Dr. Carl Huber, of Michigan. Its chief attraction lies in a splendid series of coloured plates. These amply reflect the care that has been taken, first in selecting the material and field, and then in reproducing the salient points in each section by a combination of photography and careful drawing. The coloured plates, to the number of some 150, form very truthful—and occasionally brilliant—imitations of the most approved microscopic stains, and excel anything we have formerly seen in a volume of such moderate size and cost. The accompanying text is laudibly concise, yet fully descriptive, and the “legends” attached to each plate are very complete, describing the structures seen throughout the section, and including the detailed technique of its preparation.

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*Pankreas - Pathologie.* Theil I: “Multiple Abdominale Fettgewebsnekrose.” By Dr. H. TRUHART. Wiesbaden: J. F. Bergmann. 1902.

THE volume is stated to be part of a work on pancreas pathology, and in this section the author treats of the subject of multiple abdominal fat necrosis in its relation to the pancreas: a second part, which will deal with the local lesions of the pancreas, is promised at a later period.

The work is fairly well balanced, but has a somewhat long preface and historical introduction. Much space is devoted to the older observations, anatomical findings, frequency, and predisposing factors of the disease; there is also a table with a summary of all the cases of this condition which have been recorded up to date. A full discussion of the etiology and pathogenesis is given, while diagnosis and treatment are more briefly alluded to.



The chief aim of the work is to demonstrate the views of the writer on the origin of fat necrosis, inspired by a case in his own practice. He disposes of the older theories, gives more attention to the discussion of the micro-parasitic view, and advocates the pancreas ferment theory. He excludes the indirect method of the occurrence of fat necrosis by transmission of the pancreatic ferment through the blood-channel, and holds that the origin of fat necrosis has under all circumstances for its presupposition the direct escape of the steatolytic ferment of the pancreatic juice from the gland into the abdominal cavity. Fat necrosis is merely an indication of an affection of the pancreas, it is not an idiopathic disease. He shows that its occurrence is more frequent in lesions of the gland which cause a softening of the pancreatic tissue, while those conditions which lead to chronic inflammation and induration are extremely unsuitable for its development.

As an accurate and exhaustive work on this topic it can be recommended; but it is long—there are 498 pages—and the sentences, on account of their extreme length, are often necessarily much involved.

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*Deaths in Childbed: A Preventable Mortality.* By W. WILLIAMS, M.A., M.D., D.P.H.Oxon. London: H. K. Lewis. 1904.

THIS book, which contains the Milroy Lectures of 1904, is intended to show the prevalence of puerperal fever in England and Wales, and to indicate measures of prevention. The lectures, three in number, deal with the different aspects of the subject. The first considers the statistical side; the second, the etiological; and the third, the preventive.

The first embraces a consideration of puerperal septic diseases and the accidents of childbirth, based on the classification of the Registrar-General, and it is pointed out that whenever parturition or miscarriage has occurred within one month before the death of a woman, whatever be the intimate cause, that fact must be certified, even though the cause of death be in no way connected therewith. The author very properly shows also that, in the statistical consideration of puerperal fever, count must be taken of the fact that in official returns up till 1850, and, indeed, for some time thereafter, the term "metria" was in common use, but that only after the year named the term "puerperal fever" made its appearance. In view of the confusion resulting from the use

of the latter name, the Registrar-General has very properly recommended that it should cease to be employed as expressive of the cause of death of women after childbirth where septic infection has been present, and that one or other terms, more distinctly descriptive of the septic infection, as puerperal septicæmia, puerperal pyæmia, or other like term, should rather be used instead. After the English Registration Act of 1874 became law, the Registrar-General stated in his Thirty-eighth Annual Report that the mortality of mothers was higher in 1874-75 than it had been since 1847, notwithstanding the progress of the obstetric art. The rise of the disease after 1881 would seem to be accounted for, says the author, by more exact definition of the registered causes of death than by actual increase of the number of deaths. He states that, relative to deaths from puerperal septic diseases and accidents of childbirth combined, childbirth mortality has not diminished during the last twenty years, and that the rate per 1,000 in 1893 was 6·51, being the highest recorded since the institution of the registration system. Taking these diseases and accidents separately, the same fact emerges, the rate for the former being 3·30 per 1,000, and for the latter, 3·21 per 1,000. He is inclined to attribute this chiefly to improved registration, however, and not to actual increase in mortality, and to believe that the undiminished mortality is more apparent than real. He gives a variety of tables and hatched maps to illustrate the incidence of these diseases and accidents in counties and county groups in England and Wales. In the twenty years 1881-1900, in the whole of England and Wales, 1 woman in every 476 was the victim of puerperal septic diseases, while in North Wales and South Wales the ratios were 1 in 344 and 1 in 357 respectively; and, based on the same data, from accidents of childbirth, 1 in 416, 1 in 285, and 1 in 277, in these respective areas. During these two decades, the mortality-rates in Wales from puerperal septic diseases were higher than in the fifty-three years 1848-1900, due, he believes, in large measure to improved registration. From a consideration of the geographical incidence of puerperal diseases, he concludes that density of population does not seem to be a factor of much importance, because they exhibit a tendency to prevail in sparsely populated areas in which medical assistance is often difficult to obtain. Moreover, he has reached the conclusion that the mortality is generally lowest in counties of relatively low altitudes. Reference must be made to the tables, which he gives, to follow the incidence of these conditions in populous

centres; but the general fact is apparent, that the higher rates, in respect both of diseases and accidents of childbirth, prevail in mining and industrial centres.

With respect to the causes of puerperal septic diseases, the author seems to concur in the view expressed by many obstetric writers, that the misuse of anæsthesia and the want of adequate aseptic measures by practitioners are mainly to blame. Others, however, attribute the cause to sepsis introduced in unnecessary interference with the natural course of labour. Under the heading of "Mortality in Maternities or Lying-in Hospitals," the author gives much interesting information regarding the institution of these hospitals and the means for instruction of midwives.

The lecture on the etiology of puerperal septic diseases is well written. The author traces the occurrence of puerperal fever historically and geographically, accords to Semmelweis the priority of founding, in 1846, the doctrine of its septic character, and to Stadfelt of Copenhagen, that of first applying, in 1865, antiseptic methods to puerperal conditions in the maternity hospital of that city. He narrates the facts of an outbreak in Glamorganshire, the county of which he is medical officer of health, in 1892-93. The disease seems to have been endemic in one, at least, of the districts attacked. In one district was this especially the case. In fourteen months, 34 women were seized, of whom 16 died. During the same period, 793 births were registered; the mortality was, therefore, equal to a rate of 20.1 per 1,000 registered births. In 12 of one group composed of 18 cases, house sanitary arrangements were found defective in 8, and in 4 others scarlet fever or erysipelas was either in the same house at the time of confinement of the women, or was in immediately adjacent houses. Seven of that group of 18 cases were primiparæ, 5 ending fatally. Nine of them were attended by the same midwife, 3 of them being fatal. In another group of 11 cases, 6 were primiparæ, of whom 4 died. Four were attended by one midwife, and 4 by another. From the facts of that epidemic outbreak, the author concludes—(1) That primiparæ are more liable to attack than multiparæ; (2) that the disease more readily attacks, and is more fatal in, easy and natural labours; (3) that his facts do not afford conclusive evidence of the relationship, if any, between puerperal septicæmia and scarlet fever, erysipelas, measles, &c.; and (4) that the infection is subtle, persistent, and portable, and more difficult to get rid of than in almost any other disease. It is noteworthy how the disease was spread by midwives, this being due, he alleges,

to their want of knowledge of sanitation, antiseptics, and infection, and to the fact that there is no supervision over them. A short description is given of the bacteriology of puerperal infection, but there is no evidence that any bacteriological examination was made of the vaginal discharges of the women attacked in the outbreak which he describes. As to preventive measures, the author believes that the Midwives Act of 1902 will help to reduce this preventable mortality, but he thinks that the training of midwives is a form of technical education which might be, and ought to be, undertaken by County Councils. He further believes that girls of the artisan and poorer classes ought to be taught the elementary principles of nursing and hygiene. This lecture (the third) concludes with a review of the provisions of the Midwives Act, certain of which are calculated to limit the spread of the disease in the future.

We can commend the book to our readers.

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*Manual of Gynecology.* By D. BERRY HART, M.D., and A. H. FREELAND BARBOUR, M.A., B.Sc. With 12 Lithographs and 359 Woodcuts. Sixth Edition. Edinburgh and London: W. & A. K. Johnstone, Limited. 1904.

"HART AND BARBOUR" has been one of the favourite textbooks of gynæcology for over twenty years, and has now reached its sixth edition. In one or two chapters this excellent manual is still hardly up to date, and the authors are, perhaps, too much afraid of advocating "advanced methods;" but on the whole it forms one of the best introductions to the subject, and cannot be too strongly recommended to the student.

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*The Student's Handbook of Surgical Operations.* By SIR FREDERICK TREVES, Bart., K.C.V.O., C.B., LL.D., F.R.C.S. New Edition, revised by the Author and JONATHAN HUTCHINSON, JUN., F.R.C.S. 121 Illustrations. London: Cassell & Co., Limited. 1904.

IN this new edition, Sir Frederick Treves presents to us what is practically a new work, for the whole style, arrangement, and material have undergone a radical change. This change we recognise at once as greatly enhancing the value of the

handbook. Probably because it was in reality little more than a boiled-down edition of the author's larger work, and that it seemed to be the result of an effort to include references, of some kind or other, to well-nigh every possible operative procedure, the earlier issue was an eminently depressing and unreadable book—and the hardly-used student has too many text-books of that sort. The author has evidently recognised this grave defect in the earlier issue, and has endeavoured to grapple effectively with its ground cause. In the preface he clearly indicates this, for he says, "This handbook concerns itself only with the most essential and most commonly-performed operations." "I have not discussed the general principles of operative surgery, nor have I embarked upon a critical consideration of the value of various methods." That is well enough, and in a measure the author may be said to have achieved his purpose. There has been much curtailment, and not a little omission. For example, "amputations" are disposed of in 123 pages; formerly they required 142. "Excisions of bones and joints" had 58 pages in the older edition; in the present one they are given only 43. Other examples might be given. The greater brevity has added to, rather than taken from, the value and effectiveness of the sections.

On the other hand, can it be contended that such operations as "excision of the Gasserian ganglion," "cholecystenterostomy," "uretero-lithotomy"—not to mention others—are amongst "the most essential and most commonly performed operations"? Evidently the author thinks so, for they receive more or less adequate treatment.

For some reason or other, however, operations on the prostate do not seem to come into that category, for they are not included in the work, though the great advance in prostate surgery during recent years would, we think, have warranted their being referred to—even to the extent of having a chapter devoted to them.

Freyer's operation of prostatectomy is dismissed with a four-line reference (not under Freyer's name) in the chapter on suprapubic cystotomy.

"Certain operations, such as circumcision and the tapping for hydrocele," have been excluded on the grounds that they come under the heading of minor surgery. We confess that we cannot fall in with this view. Circumcision is certainly a fairly common, and, one may reasonably say, an essential operation. Not only so, it is one of the most generally badly-executed operations we know. One would require to define

"minor surgery." Is circumcision "minor surgery," and amputation of a finger, or operation for anal fistula major surgery? The distinction is not very clear.

It has been said that the whole style of the work has been altered. Perhaps this is best seen in the chapter on the radical cure of hernia. The improvement is great, and though the result is an addition of 10 pages, it is well worth the greater length. The author has not adhered to the earlier plan of outlining separately the chief, recognised, or standard operations for radical cure. He has generalised, and referred to these merely by the way, in so far as illustrating the different procedures applicable to the particular stages of the operation. In many ways this is a great gain, though we fancy the student will still seek to "get up" the special operations of Banks, Bassini, Macewen, and Kocher as separate entities.

Sir Frederick seems to have no high opinion of Macewen's operation. He says it is "rarely employed." We think it would be possible to disillusionise him on this subject.

There are many points of detail that might be referred to, and not a few statements in the book that might be disputed, but these are inseparable, we fear, from the work of a man of such outstanding individuality and pronounced opinions as Sir Frederick Treves. How far the great alteration in the whole style of the work is due to the initiative of the author, how much of it should be put to the credit of Mr. Hutchinson, is not clear, but it must be said that, from every point of view, the present edition is vastly superior to the earlier issues.

There are 27 additional illustrations.

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*The Utero-Ovarian Artery.* By BYRON ROBINSON, M.D.  
Chicago, Ill.: E. H. Colegrove. 1903.

THIS monograph describes in great detail the anatomical relations of the arterial system in and around the uterus and adnexa. It should stimulate the anatomist and gynaecologist to devote more careful study to such relationships, as the author claims, from his observations, the performance of uterine operations with slight loss of blood, and conservation of important structures which are too frequently sacrificed at the present time by pelvic surgeons. Some interesting x-ray photographs are shown of uteri which have been

injected with celloidin and vermilion, and later with red lead and starch.

Stress is laid upon the spiral arrangement of the utero-ovarian artery, as this condition lends itself to the various positions which the uterus occupies in two such different conditions as a full-time pregnancy, and vaginal hysterectomy during its more pregnant state.

The relation existing between the cervical loop and the ureter is especially interesting, and the author explains the more ready descent of the former when traction is made upon the cervix as accounting for the rarity of ureteral injury during the operation of vaginal hysterectomy. The cervical loop is said to double in length and size during the first three months of pregnancy, and the slight hæmorrhage usually attendant upon lateral cervical tears is accounted for by the dichotomous branching of that vessel at the cervical border. A description is given of the oligæmic zones present at the fundal, corporal, and lateral cervical regions, and the author's operation of endometrectomy, with partial removal of the central myometrium, is based on the occurrence of such an oligæmic central longitudinal zone.

The monograph contains many illustrations (117), but there is much needless repetition both in the text and drawings, and thus the work fails to occupy the attention of the reader till the end. This is a matter for regret, as there is certainly much which is original in the book, while much time and labour must have been spent in the preparation and dissection of specimens.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

### M E D I C I N E.

By JOHN G. GRAY, M.D., F.F.P.S.G.

**Three Cases of Tumour of the Cerebellum and one of the Fourth Ventricle.** By Dr. Hermion C. Gordinier (*Albany Medical Annals*, February, 1905, vol. xxvi, No. 2).—A paper on the symptomatology and localisation of cerebellar tumours, and containing a report of the cases referred to, was read before the Medical Society of the County of Albany, in the State of New York, on 11th January, 1905.

The chief features of interest are that the characteristic symptoms of cerebellar disease are well illustrated by the cases reported. The general symptoms of tumour of the brain are present, while the particular symptoms

indicative of involvement of the cerebellum, such as nystagmus, ataxia or staggering gait, with near or distant pressure symptoms, such as implication of the cranial nerves of one side, paresis or paralysis of the extremities, intention tremor, and rigidity and retraction of the neck are very prominent. Tenderness of the scalp was marked in the third case of the series. The brief summaries which appear at the head of the report of each case may be given.

Autopsies were obtained in all except the second.

CASE I.—“Two solitary tubercles of the cerebellum and one of the pons varolii, producing cerebellar inco-ordination, with a distinct tendency to fall towards the right side, and strabismus of the left eye.”

CASE II.—“Tumour of the right cerebellar hemisphere and median lobe, probably compressing the corpora quadrigemina and right motor and sensory paths in the pons, as well as the root fibres of the right abducens, facial, auditory, hypoglossal, and fifth nerves; staggering towards the right side.”

CASE III.—“Tumour of the left cerebellar hemisphere and median lobe or worm, compressing the left side of the pons and medulla, the left facial, auditory, glosso-pharyngeal, and hypoglossal nerves.”

CASE IV.—“Tumour of the choroid plexus of the fourth ventricle, growing dorsally, and producing symptoms characteristic of a tumour of the median lobe of the cerebellum; distinct staggering towards the right side.”

**The Early Diagnosis of Interstitial Nephritis.** By M. Le Clerc (*Lyon Méd.*, 20, 1903; H. Citron, *Deutsche Medizinisch-Zeitung*, 22nd December, 1904).—In the author's opinion this disease is too frequently unrecognised at an early stage. The patient, usually between 40 and 50 years of age, and apparently otherwise in good health, consults the physician on account of a feeling of weakness and oppression. The doctor either finds no albumen, or only a minute trace, when he examines the specimen, the urine having probably been passed in the morning or after the patient has been resting for some time, and he concludes that there is no serious renal mischief. Still the patient may be suffering from interstitial nephritis, which will become manifest later. The most important early symptoms and signs are a feeling of weakness and oppression after exertion and during the night; increase in the size of the heart; increased loudness of the second cardiac sound as heard to the right of the middle line; galloping rhythm; hard, accelerated pulse; polyuria, with increased frequency of micturition, the urine being very light in colour and of low specific gravity. These, even if albumen be absent, should make one sure that he has to deal with interstitial nephritis, and he should proceed to give the necessary instructions as to the course the patient should pursue both as regards his habits and work, and his diet. The author acknowledges, at the same time, the difficulty of having these carried out in the case of persons who feel as if there was almost nothing the matter with them.

**Acute Lymphatic Leukæmia in an Infant.** By Ralph C. Larabee (*Boston Medical and Surgical Journal*, 12th January, 1905).—The child was 6 weeks old when it came under observation, with typical lymphatic leukemia. The white corpuscles numbered 918,000; 93·2 per cent of these were lymphocytes. Platelets were nearly absent. Death took place at the end of a month, with symptoms of respiratory obstruction.

The patient was a female, the only child of healthy Russian-Jewish parents. The labour was easy, and non-instrumental. At birth, the child weighed 6½ lb. It was breast-fed.

Medical advice was first sought on account of slight diarrhœa and vomiting which had lasted for a day. The child was poorly nourished but fairly developed, and there was little else of note than that a movable mass could be felt in the region of the spleen, which extended to below the level of the umbilicus; the border was sharp. A number of nodules, varying in size from a pea to that of a marble, were felt in the groin and axillæ.

An examination of the blood was made on the forty-fifth day, counting from birth. The result was as follows:—Hæmoglobin, 60 per cent; red corpuscles,



4,392,000; white corpuscles, 918,000. A differential count of the white corpuscles was also made. It gave the following results:—Polymorphonuclear neutrophils, 0·5 per cent; small mononuclear basophiles (lymphocytes), 93·2 per cent; large basophiles (large mononuclears and transitionals), 5·9 per cent; eosinophiles, 0·1 per cent; x-cells, 0·3 per cent. The basophilic (non-granular) mononuclear cells, comprising 99 per cent of the leucocytes present, were of all sizes; the distinction, therefore, between large and small forms was quite arbitrary. The cells to which the name x-cells was given were large, with single, pale nuclei filling nearly the whole cell, the blue protoplasm studded with small deeply-stained, reddish, oval or round granules. The author thinks that perhaps they should have been classed as myelocytes. After prolonged search, a single cell with neutrophilic granular protoplasm and a slightly indented nucleus was found, although obvious myelocytes were absent. No mast cells nor nucleated red cells were seen during the count. There was slight poikilocytosis. The platelets were greatly reduced; only five or six were found after an hour's search.

Fowler's solution was given in minute doses, but was not well borne. The infant, however, gained half a pound in weight and seemed to be doing well, when symptoms which were believed to point to obstruction of the larynx or trachea appeared. There was complete aphonia. No membrane was seen in the throat. The patient died on the way to hospital. A *post-mortem* examination was not allowed. The immediate cause of death could not be determined. Many possible causes are alluded to, such as enlargement of the thymus gland, leukaemic infiltration of the lungs, hæmorrhages into the pleural cavity or mediastinum, pressure of lymphatic nodules on the vagus or recurrent laryngeal nerve. They may also be of cardiac origin.

Leukæmia is much rarer in infancy than in childhood. Statistics bearing on this are furnished, and the author claims that this is probably the youngest child of any hitherto reported with this disease in which the blood has been studied by modern methods.

With regard to the small number of platelets found, the author quotes the statement by Muir that "when the uninucleated corpuscles alone are increased in number the blood plates become very few, and in some cases may be almost absent before death. In the other type described, they are generally increased in number."

## SURGERY.

By JOHN PATRICK, M.A., M.B.

**Amaurosis after Paraffin Injection for Saddle-Nose** (W. Mintz, of Moscow, in *Centralblatt für Chirurgie*, 14th January, 1905).—Two cases of blindness following paraffin injection of the nose have been already reported, the first by Holden, where sudden blindness of the right eye resulted from embolism of central artery of the retina after the third injection of paraffin of melting-point 43·5° C. (110° F.); the second by Leiser, where in three sittings 4·5 c.cm. of paraffin of melting-point 42° C. were injected, and the last was followed by sudden blindness of the left eye from thrombosis of the ophthalmic vein.

The author publishes a third case. On 1st September, 1903, he had corrected in one sitting a syphilitic saddle-nose by injection of 1 gram. of paraffin of melting-point 43° C. A year later the patient returned, as a hollow had formed at the margin of the paraffin mass. On 2nd September, 1904, one-quarter gram. of paraffin was injected to fill up the gap. Three minutes after the injection, there was pain in the left eye. This was very quickly followed by complete blindness of that eye, with vomiting and pulse of 48. Examination of the eye showed that there was paresis of the internal rectus, inferior

rectus, and inferior oblique muscles; ophthalmoscopic appearances led to a diagnosis of embolism of the central artery of the retina; there was a slight sympathetic reaction visible; the pupil was dilated; the vision nil; the evening temperature 98.6° F.

*3rd September.*—(Edema of eyelids. Exophthalmos of left eye, the eyeball movable slightly upwards and outwards. Pulse, 48 to 56; temperature, 98.6° to 99°.

*4th September.*—(Edema increased; ecchymosis of conjunctiva; cornea dimmed.

*5th September.*—Eyeball immobile; increase of corneal opacity; skin of nose bluish-black in colour.

*6th September.*—Pain in left eyeball less; corneal opacity and œdema of lids increased; skin of nose analgesic; temperature, 99.4°.

*7th September.*—Two thrombotic areas on bridge of nose. From this upwards towards the brow, past the inner canthus of the left eye, extended a livid, irregular stain, which was both anæsthetic and analgesic.

*8th September.*—In this area of livid stain, the skin became necrotic; exophthalmos and œdema less; temperature never over 98.6°.

*10th September.*—Exophthalmos less; cornea less dim; eyeball more movable.

*12th September.*—Iritis.

*24th September.*—Ophthalmoscopic examination now possible, revealing uniform injection of fundus.

*10th October.*—At inner and lower parts, slight pericorneal injection. Cornea transmitting light.

*20th October.*—Vessels in fundus now differentiated; in the veins, evident stasis.

*16th November.*—Atrophy of optic nerve; vision nil.

The author offers this explanation of the course of events: under the influence of the injected paraffin-mass there developed, first, a thrombosis of the external nasal veins which extended by continuity to the inferior ophthalmic vein, shown by the paralysis of the rectus inferior, rectus internus, and obliquus inferior. While the thrombosis spread towards the optic foramen, the blood in the central vein of the retina coagulated, as indicated by blindness; then set in thrombosis of the main stream of the ophthalmic vein and cavernous plexus. Thereafter must the area drained by the superior ophthalmic vein have suffered, and as an indication of this circulatory disturbance, there appeared on the inner corner of the eye and on the brow, in the area of the frontal veins, the livid, marble-like stain—the forerunner of necrosis of the skin.

The author cannot blame himself in any way for this accident on account of failure of technique. He thinks that in the future patients should be informed of its possibility. He has done the operation nineteen times altogether, and two of the patients persisted in having it done in spite of his warning. His concluding words are, “*Dixi et salvavi animam meam.*”

**A Case of Amyloid Disease of the Thyroid** (Freiherr v. Eiselsberg, of Vienna, in *Centralblatt für Chirurgie*, Report of German Surgical Association).

—The patient was a man of 48 who, in his 36th year, when there was no appearance of goitre, had a severe chill with obstinate bronchial catarrh and œdema of the lower extremities. In 1902, he was admitted to medical wards with a tolerably severe attack of dyspnoea, supposed to be due to the bronchial catarrh. At that time a slight goitre was observed. The liver was large and hard. The urine was albuminous, with hyaline casts. He improved, left hospital for a time, and came back with his spleen palpable and the goitre much larger. In 1903 came his third residence in medical wards. The goitre was very large; he had ascites; the urine was more highly albuminous than before. He was then transferred to the surgical clinic. The goitre was large, consisting of three lobes, smooth in surface, regular in outline, and of hard consistence. There was stenosis of the trachea at the level of the fourth and fifth rings on both sides. The diagnosis of malignant disease of the

thyroid was made on account of the rapidity of growth. The part was anaesthetised by the Schleich method. It was found impossible to remove the whole mass. The wound healed well. In the second week, the progress of the case was interrupted by a slight attack of pains and stiffness in the extremities—tetany. This yielded to treatment. The dyspnoea was considerably improved.

The tumour mass presented, on section, a yellow, homogeneous appearance, a typical picture of amyloid disease, with a few scattered normal follicles filled with normal colloid material, and not a goitre at all.

Such amyloid degenerations of the thyroid are very rare, and still more rarely are they presented for operative treatment. Since 1898, over eleven cases have been reported, all, however, found *post-mortem*, and all as here associated with amyloid disease in other organs.

The fact that after the removal of the greater part of the thyroid slight cramps of extremities occurred, will confirm the analogous observation made after removal of carcinomatous goitre.

## DISEASES OF THE SKIN.

By J. WYLLIE NICOL, M.B., C.M.

**Two Cases of Progressive Scleroderma with Generalised Melanoderma.** By Drs. Charvet and Carle (*Lyon Méd.*, 28th August and 4th September, 1904).—The conditions which these cases presented—generalised melanoderma, progressive scleroderma, papillary hypertrophy with keratosis and with lichenification, ending fatally in two years—strongly recalled Addison's disease and acanthosis nigricans. The writers feel that in the present state of our knowledge they must be content to classify the cases under the above definition.

The first case was a married man, 54 years of age. With the exception of intermittent fever, contracted abroad, and dysentery he had enjoyed good health. There was no history of tuberculosis, syphilis, alcoholism, or previous nervous or skin affection. His illness began in September, 1900, as a "chill," with pains and cramping in the limbs, especially the arms. Swelling and stiffness followed later in the hands, wrists, and elbows, and in time extended to the shoulders and the chest. In three months this oedematous condition was replaced by dryness, and the skin became glued to the bones. By the end of 1901, the whole skin was similarly affected. Pigmentation also took place. When it began is not known, as the patient, who was not observant, did not notice it until it was very marked. When admitted to hospital in July, 1902, no part of the skin was normal in colour or elasticity. On the limbs, sclerosis and atrophy predominated. The thin, hard, tightly-stretched skin prevented movement. On the trunk the lichenification and papillomatous condition predominated. The skin was two or three times thicker than normal. This was specially marked at the buttocks, where there were large folds due to the muscular atrophy. It was covered by fine elevations and furrows. On the chest these elevations formed quadrilateral papules like those of lichen planus, but more confluent. Towards the shoulder and hip atrophy again became the chief feature, and the acromion, iliac crest, and trochanter looked as if they might pierce the skin. The face was emaciated and hide-bound. Speech was difficult. On the forehead, periauricular region, and nape of the neck there were flat confluent papules, smooth and glossy. The colour varied from yellow on the arms, thorax, and cheeks, to dark brown on the forehead, neck, abdomen, and genito-crural folds. There were black patches here and there, and some smaller leucodermic ones. The mucous membranes and tongue showed sclerotic and leucodermic spots. Deglutition was difficult. No

perspiration could be produced. There was generalised alopecia. The nails were tough. Sensation was present in all forms, but weakened. Electrical examination gave contradictory results.

There was general muscular atrophy. This was late in appearing, as the absence of weakness was noted in May, 1902.

The heart was normal. The urine and urea were diminished. The blood examination showed 34,870 leucocytes, made up as follows:—Mononuclears, 5 per cent; lymphocytes, 4 per cent; polynuclears, 85 to 90 per cent; and eosinophiles, 3 to 5 per cent.

He died in October of broncho-pneumonia.

At the *post-mortem* examination the lungs showed signs of broncho-pneumonia, emphysema, and old tuberculosis. The heart was slightly enlarged. There was no myocarditis. There was some atheroma of the aorta. The liver and spleen were small, hard on section, and showed perihepatitis and perisplenitis. The kidneys were small, with adherent capsules. The suprarenal capsules were large and soft in the centre; they showed no trace of tuberculosis or recent inflammation. The thyroid, the nervous system, and great sympathetic seemed normal.

Microscopical examination of *skin from the chest with parallel striae* showed that in the elevations the interpapillary processes of the epithelium were divided and multiple, and the papillae of the corium correspondingly elongated; the stratum corneum was well marked, the stratum granulosum thickened and strongly pigmented; the papillae showed abundant cell infiltration and pigment granules. At the portions corresponding to the furrows the epithelium was thinned and had no interpapillary processes; the stratum corneum was very thin, there was practically no stratum granulosum, and the corium beneath had fewer cells but more pigment granules. The corium was invaded by a "hyaline connective substance," and there was cell infiltration round the vessels. There was a striking abundance of elastic fibres. The sebaceous glands were atrophied. The sweat glands were normal, but their ducts were often dilated, and their cells showed hyaline degeneration. The capillaries seemed very scanty.

Skin from another part of the chest showed the same features, except that the epithelium, papillae, and number of pigment granules were regular. Now and again the epithelium was thickened, and there was an appearance like a horny pearl. At these points the capillaries were abundant and filled with blood. In skin, from the brow, nerve fibres were observed; the sheath of Henlé was moderately thickened, but it was clear that no inflammation extended beyond it. The palate and uvula were also examined. The muscles of the buttock showed no change capable of explaining the atrophy noted during life; their nerves and vessels were unaltered. The suprarenal capsules were normal. The intertracheo-bronchial gland showed no sign of tuberculosis.

The second case was a married man, aged 55 years. There was nothing of importance in his history. He was accustomed to take some glasses of wine and some absinthe daily. For four years he had suffered from gastrointestinal symptoms. He had attacks of vomiting lasting for several days, or attacks of diarrhoea, with abdominal swelling and weakness, forcing him to stay in bed. Six months before he noticed pigmentation on the upper arms and chest. At the same time the delicate movements of the hands were interfered with by sclerosis over the fingers and wrists. The weakness and pigmentation increased, and he entered hospital in August, 1903. On admission, he was very restless and delirious, but had lucid intervals. The bronzing recalled Addison's disease. It was darkest on the hands, feet, abdomen, and scrotum; leucodermic lines ran through it. Sclerosis was general and greater at the extremities of the limbs and face. The skin was bound to the bones, and prevented movement. The mucous membranes were free. There was abdominal distension and dullness in the flanks. Pulse was regular, tension moderate. There were signs of effusion in both pleurae. The temperature was normal. The urine contained albumen. Examination of the blood showed 2,697,000 red cells, and 31,000 leucocytes, made up as

follows :—Polynucleophiles, 86 per cent ; mononuclears, 8 per cent ; lymphocytes, 6 per cent ; eosinophiles, 0 per cent.

He died on the 30th August.

On *post-mortem* examination a litre of fluid was found in each pleura ; there was no membrane. There was a simple pericarditis ; the left ventricle was greatly hypertrophied ; there was no myocarditis. The liver showed patches of old perihepatitis ; it was normal in size, but the cut surface suggested atrophic cirrhosis. The peritoneum was thickened and filled with fluid. There was moderate perisplenitis. The kidneys were sclerosed. The suprarenal capsules, thyroid, bone marrow, cord, and brain, showed nothing abnormal. The same tissues were examined microscopically as in the first case. The skin showed practically the same features ; no nerves were observed ; none of its vessels show endarteritis.

The central nervous system does not seem to have been examined microscopically in either case.

### Three Cases of Hereditary Hyperkeratosis of the Nail-Bed.

By Dr. A. Garrick Wilson (*British Journal of Dermatology*, January, 1905).—Dr. Wilson has observed this condition in an infant, his mother, and grandmother. The grandmother was an only child ; she had thirteen children, the mother of the infant being the only one now living. Of these, the first two had deformed nails, as also the tenth and thirteenth ; the first and second were boys, and the tenth and thirteenth girls. The mother of the infant was the tenth. The infant when first seen was a year old, and a weakly child ; he had a brother a year and a half older, whose nails were quite normal. Since the family came under observation, another healthy male child has been born, whose nails are affected.

In all the cases the nails of both hands and feet were affected, and the condition was present at birth, and persisted throughout life.

The nails are smooth, normal at the base, but raised at their free extremities by a dark, friable, horny mass, which projects under the free edge. The nail grows much faster than the horny tissue beneath. The nails cause no pain, but inflammation is readily set up round them, and they separate off. The new nail at first appears normal, but gradually horny tissue forms below and raises it up. The hair, skin, and teeth were normal in every case, and there were no associated congenital defects, such as sometimes occur in these cases. There was no evidence of syphilis, ichthyosis, or other skin diseases.

No cause was discovered ; no spores were found in the horny tissue from the nail-bed after maceration in liquor potassæ.

**The Treatment of "Port Wine" Nævus by Radium Bromide.** By Dr. T. J. P. Hartigan (*British Journal of Dermatology*, December, 1904).—The patient, a woman, aged 26, was born with a large disfiguring "port wine" nævus covering the left cheek and side of nose. It was of a reddish colour, with a slight purple tinge, and near the margin of the orbit were also a few obviously dilated vessels. Two specimens of radium, weighing 10 mgr. each, were used. The exposures varied in duration from half an hour to one hour. After each, as a rule, erythema occurred with a pricking sensation, and vesicles formed. These dried into a scab, which, falling off in a week or ten days, left behind a thin white scar. Between the exposures boracic ointment was applied at first, but latterly compression by collodion appeared to hasten the result.

The treatment extended over nine months, during which she had thirty-nine weekly exposures. With the exception of a few untreated areas, the nævus had disappeared.

**Mitosis in Mast Cells.** By L. H. Huie (*British Journal of Dermatology*, January, 1905).—The writer has observed mitosis in the mast cells of the developing skin tissues of mice before and after birth. Here the mast cells are larger and more numerous than in human skin.

*Books, Pamphlets, &c., Received.*

- First-Aid to the Injured and Sick: An Advanced Ambulance Handbook**, by F. J. Warwick, B.A., M.B., and A. C. Tunstall, M.D. Third and Revised Edition. Fourteenth Thousand. Bristol: John Wright & Co. 1903. (1s. net.)
- Poisonous Plants of all Countries**, by A. Bernhard Smith. Bristol: John Wright & Co. 1905. (2s. 6d. net.)
- The Book of Prescriptions (Beasley)**, with an Index of Diseases and Remedies, Rewritten by E. W. Lucas, F.I.C., F.C.S., with an Introduction by Arthur Latham, M.A., M.D. Eighth Edition. London: J. & A. Churchill. 1905. (5s. net.)
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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 22ND APRIL, 1905.**

	WEEK ENDING			
	April 1.	April 8.	April 15.	April 22.
Mean temperature, . . .	45·3°	41·8°	44·7°	41·9°
Mean range of temperature between day and night, . .	18·0°	33·5°	32·4°	23·9°
Number of days on which rain fell, . . . . .	7	5	4	3
Amount of rainfall, . . ins.	0·68	0·52	0·13	0·12
Deaths registered, . . .	258	272	289	290
Death-rates, . . . . .	16·6	17·5	18·6	18·7
Zymotic death-rates, . . .	1·7	2·1	2·8	2·3
Pulmonary death-rates, . .	5·9	5·7	5·2	5·9
DEATHS—				
Under 1 year, . . . . .	59	61	65	58
60 years and upwards, . .	44	48	57	68
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	5	8	11	17
Scarlet fever, . . . . .	...	1	1	...
Diphtheria, . . . . .	3	2	2	...
Whooping-cough, . . . .	14	19	26	15
Fever, . . . . .	2	2*	...	3
Diarrhoea, . . . . .	5	10	3	3
Croup and laryngitis, . .	1	2	2	...
Bronchitis, pneumonia, and pleurisy, . . . . .	61	65	55	64
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup, . . . . .	15	14	18	9
Erysipelas, . . . . .	21	20	25	13
Scarlet fever, . . . . .	29	19	27	11
Typhus fever, . . . . .	1	1	...	1
Enteric fever, . . . . .	6	15	12	2
Continued fever, . . . .	...	...	...	...
Puerperal fever, . . . .	...	4	2	3
Measles,† . . . . .	276	336	289	275

\* Typhus.

† Measles not notifiable.

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ORIGINAL ARTICLES.

REPORT AND DESCRIPTION OF SPECIMENS OF FIVE  
CASES OF UTERINE MYOMA AND THREE CASES  
OF OVARIAN DERMOID TUMOUR.<sup>1</sup>

By J. K. KELLY, M.D.

MYOMAS.

CASE I.—*Myoma complicated by tubercular salpingitis and peritonitis.*

The first case is that of Mrs. M., aged 45 years. She had ten children, the last of whom was born five years ago. All her confinements were easy.

The menses began at 14, and were regular till three years ago, when pain came on in the right side and the discharge lasted longer than formerly. Ten months ago, she noticed a swelling in the left lower abdomen, and had some tenderness there. The swelling and pain have gradually and steadily increased. The menses have become more copious, and three weeks ago she had a flooding. She has had no trouble with micturition.

On admission (9th February, 1904), the condition was described as follows:—Abdomen protuberant; striæ well

<sup>1</sup> Read at a meeting of the Glasgow Pathological and Clinical Society held on 9th January, 1905.



marked. A firm tumour is felt occupying the whole abdomen; the upper border is  $5\frac{1}{2}$  inches above the umbilicus. The tumour is slightly movable, laterally and vertically. The surface is pretty uniform, though presenting here and there a feeling of lobulation. Along its upper border is a distinct ridge, presenting considerable mobility and resembling thickened infiltrated omentum adherent to the tumour.

*Per vaginam*, portio vaginalis is in ordinary situation. Os is wide transversely, with irregular borders. Cervix passes both anteriorly and posteriorly into the firm base of the abdominal tumour, the movements of which are directly communicated to the uterus.

At the operation on 15th February, the tumour was found adherent to the omentum and bowel by flaky, fibrinous material, and, in the lower part, to the parietal peritoneum, which was considerably thickened. The mesentery and intestine were granular on the surface, and there was a large amount of fluid in the peritoneal cavity. The tubes and ovaries were raised up on the sides of the tumour, the tubes projecting from it like little wings, while the ovaries were plastered against it by thin fibrous adhesions. The broad ligaments were ill defined, and mostly taken up by the tumour. The uterus was amputated just below the os internum. The recovery was complicated by a phlegmasia of the left leg, but patient went home on 4th March.

The specimen shows the uterus occupied by a large myoma, about the size of a football, and having high up on its surface the tube and ovary on each side, partly enveloped in adhesions. The tubes showed tubercles, and tubercles were also present on the peritoneum where the omentum was adherent over the tumour.

#### CASE II.—*Myoma complicated by pregnancy.*

Mrs. R., aged 41, nullipara, married four years; thin, anæmic, slightly exophthalmic, and with enlarged thyroid.

Menses began at 15, were regular every twenty-eight days, lasting one or two days. No dysmenorrhœa; no leucorrhœa.

Five months ago she noticed her abdomen swollen in the middle line, but paid no attention to it, as it caused no trouble. Seven weeks ago she began to have sickness and vomiting in the morning and after food, without pain in the epigastrium. Six weeks ago, she had very severe abdominal pain for several days. The pain has continued since then, but not very severe, and for ten days has been almost completely gone. Four weeks ago she had great frequency of micturition, but this has

gradually improved. She has had occasional attacks of this kind for several months past, but has no pain in micturition. Her breasts have become enlarged, the areolæ are darkened, and a small amount of secretion can be expressed from the nipples. The last menstruation was three months ago.

On admission (13th September, 1904), the abdomen is greatly enlarged, being specially prominent on the right side, where it bulges forward mostly about and slightly above the level of the umbilicus. The left side is also distended, but less so than the right. On palpation, a very firm, irregular mass is felt occupying the upper abdomen, lying mainly to the right of the middle line, but freely movable laterally—so much so that it can be pushed almost completely to the left side. This hard mass is separable from another mass lying in the lower abdomen, which shows an irregular firm portion in the right iliac region, and an ill-defined elastic portion passing thence into the left iliac region.

*Per vaginam*, the lower part of the tumour is felt as an irregular, nodular, firm mass lying over the right side of the pelvis, movable, and extending over most of the left side of the pelvis as well. The portio vaginalis is displaced backwards and to the left, and the lips, which are softened, resemble two very distinct nipple-like prominences, with the depression of the os between them.

At operation on 16th September, 1904, the large fibroid mass was found lying almost completely above the uterus, the wall of which was studded with numerous small myomas, and one was attached by a pedicle to the left round ligament. The uterus was amputated through the cervix, and the ovum was retained intact. The patient's recovery was uninterrupted, and she went home on 1st October.

The specimen shows the tumour mass above, and below this the uterus containing the ovum, and with the tubes and ovaries attached; and, on the left side, part of the round ligament, with a small myoma. The main tumour mass springs from the anterior surface of the fundus uteri, and forms a very irregular tumour, with one very marked projection on the right side. Below this the uterine wall, and even down into the cervix, contains several small myomas. The ovum is unruptured, and the embryo, at about three months development, floats in the amniotic fluid.

#### CASE III.—*Myoma undergoing myxomatous change.*

Mrs. P., aged 42, has had four children, the last six years ago. She is a thin, sallow person, with pale mucous membranes.

Her menses began at 15, recurring at monthly intervals and lasting three days. She has been married sixteen years; has never had dysmenorrhœa or leucorrhœa. She has become weaker lately, and has lost flesh, but was not aware that she had any abnormal swelling in the abdomen till she was examined by her doctor about three weeks ago. Her only local trouble has been very frequent micturition, having to pass urine almost every hour, and the inclination to do so is constant.

On admission (1st November, 1904), the abdomen is occupied up to two fingerbreadths from the umbilicus by a rather firm and irregular mass, the main part of which lies to the right of the middle line. There is some tenderness on palpation over it, especially on the right side. It can be slightly moved in a lateral direction.

*Per vaginam*, the portio vaginalis lies far back in the pelvis, presenting usual multiparous characters. The anterior part of the pelvis is occupied by the tumour felt in the abdomen, and here it presents a pretty uniform surface.

At operation on 9th November, hysterectomy was done. The left ovary and tube were normal, and were not removed. Recovery was uninterrupted, and patient left for home on 25th November.

The specimen shows the uterus, with the tumour in its anterior wall about the size of a cocoa-nut. The tumour is soft in consistency and interstitial in origin. The uterine cavity is not involved. On section, the tumour shows fibrous bands separating cystic interspaces, which are filled with mucoid material. The ovary and tube are attached to the uterus, the ovary being slightly cystic.

CASE IV.—*Uterus showing very numerous myomata.*

Mrs. M., aged 38, married six years, never pregnant; a thin, anxious-looking woman.

Her chief complaint is of pain in the lower abdomen, which has troubled her for many years, and is aggravated by cold. Menstruation is regular, but very copious and accompanied by great pain. She never thought she had any abdominal swelling, but her legs were often swollen and she had frequent micturition. During the last three years she has had several attacks of influenza, one of which, two years ago, was especially severe. Her urine shows a considerable amount of albumen.

On admission at the end of October, the abdomen was found occupied up to the level of the umbilicus by a hard, irregular

tumour, slightly tender to palpation and movable from side to side.

*Per vaginam*, the cervix is found far back in the pelvis, and shows ordinary nulliparous characters, the anterior part, and, indeed, almost the whole of the pelvic brim, being occupied by the lower part of the tumour felt in the abdomen.

At operation on 2nd November, 1904, the uterus was removed by amputation through the cervix. Both ovaries and tubes were removed.

The recovery was complicated by a severe attack of influenza, with a pneumonia of the right lung and a sharp pleuritic attack on the left side. She had to remain in the home till 20th December. Since then she has made very satisfactory progress, taking her food well and putting on flesh.

The specimen shows the uterus with innumerable myomas embedded in its walls, the size varying from about the size of an orange to a size hardly perceptible to the eye.

CASE V.—*Myoma, with blood effusion in its interior, forming a large cyst.*

Mrs. M'C., aged 28, nullipara; a thin, pinched-looking, anæmic woman.

Her menses began at 14; were regular; lasted three days. She suffered pain both before and during the flow, but had no menorrhagia or metrorrhagia. At her period a month ago she had much more severe pain than usual, especially in the right iliac and lumbar regions. This led her to poultice the abdomen, and while doing so she felt a hard, firm swelling in the right side. The pain passed off with the poulticing, and has only been felt since on making any sudden movement. She has never been unable to perform her ordinary duties as a domestic servant, but she has been feeling distinctly weaker during the last two months, and thinks she is thinner. She has difficulty in starting the act of micturition. There is increased frequency, and she has pain if the bladder is full. Her bowels tend to be confined. She is frequently troubled with vomiting some time after food.

On admission (25th November, 1904), the abdomen was found projected forward below the level of the umbilicus, and especially to the right of the middle line, by an elastic or rather fluctuant tumour, the upper border of which is slightly above the level of the umbilicus on the right side and rather below it on the left. There is pain on pressure over the mass, especially along its right border. It has slight lateral mobility.

*Per vaginam*, the lower part of the tumour felt in the abdomen projects down in the anterior part of the pelvis towards the right side, and presents a much firmer resistance than the upper part. The uterus lies below and to the left of the mass, and is closely connected with it. The sound passes 3 inches.

At operation (30th November, 1904), the tumour was found to be attached to the fundus of the uterus, and contained dark fluid blood. The uterus was amputated through the cervix, and the left appendages were removed with the tumour, the right appendages being left untouched. The tumour was covered over on its upper and posterior surface with adhesions to mesentery and bowel. On incising it after removal, the wall in its lower part, where it was attached to the fundus, was white and fibrous-looking, about three-quarters of an inch thick. In the upper part, the wall was thinned off to a fine fibrous layer. Strands of ragged tissue passed across through the fluid in the interior.

The specimen shows a cystic tumour about the size of a cocoanut, with the uterus below it having a tube and ovary attached to it on one side. The tumour has been laid open, and shows the thick, fibrous part below, where it is attached to the fundus, and the thinned-out capsular part above. In the interior are seen some strands of tissue infiltrated with blood.

#### DERMOID OVARIAN CYSTS.

CASE I.—K. C., aged 27, nullipara, thin, anæmic patient. Her menstruation began at 13, came every three to six weeks, and lasted seven or eight days. For some time it was painless, but for several years, and especially for the last two years, there has been great dysmenorrhœa. The pain begins four or five days before the discharge, and lasts all the time. It is situated in the back and lower abdomen. For the last year and a half there has been constant pain in the left iliac region. She suffers from leucorrhœa and constipation.

On admission (22nd June, 1904), abdomen presented ordinary nulliparous characters. There is no tenderness, and no distinct swelling.

*Per vaginam*, the cervix is in the ordinary situation, the uterus anteфлекed. Above the left fornix, and passing round to Douglas' pouch, is a rounded, firm, and sensitive mass representing the enlarged ovary fixed in adhesions. The right appendages are normal.

At operation (29th June), the tumour was found to be the left ovary, enlarged to the size of an orange, containing hair and fat, and with some small serous cysts in addition to the dermoid cyst. The other ovary contained numerous enlarged Graafian follicles, which were punctured. The ovary was then incised along its posterior border, but nothing abnormal was found, and it was sutured over and returned to the pelvis.

Her recovery was uninterrupted, and she left hospital on 20th July.

The specimen shows the tube and tubal mesentery normal. The ovary forms an irregular rounded tumour, consisting mainly of two cysts, one of which is packed with hairs from which the sebaceous matter has been mostly removed by ether. The lining wall of this cyst is covered with a profuse growth of hair, but most of the hairs in the cyst are unconnected with the wall, some of them being fully 6 inches long. There seems to be no bone in the wall.

CASE II.—Mrs. L., aged 20, married ten months, nulliparous, about three months pregnant, well nourished, but slightly anæmic.

Menstruation began at 15, was regular since then, except for a period of three months' amenorrhœa when 16 years old. There was always dysmenorrhœa for the day before and the first day of the illness. She has not menstruated for the past three months. For the last two months she has had morning sickness and vomiting, some sickness also during the day after meals, and some epigastric pain. During the last two months, also, she has had occasional attacks of severe pain in the lower abdomen. For the same time there has been frequent micturition, but no dysuria. Constipation is marked. Frontal headache, from which she has suffered for years, has been worse during the past year.

On admission (2nd September, 1904), abdomen presents nulliparous characters, the wall is moderately thick, there is no pain on palpation anywhere. A soft, elastic, resistant mass is felt between umbilicus and pubis, mainly to left of middle line, but with no well-defined outline. It reaches to about an inch from the umbilicus. The percussion is dull half way up to the umbilicus. The breasts are enlarged, but no secretion can be expressed from the nipples.

*Per vaginam*, the cervix is carried forward towards the pubis. Posteriorly and to the left side the pelvis is occupied by an elastic tumour, somewhat irregular on its lower surface,

continuous with the mass felt in the lower abdomen. There is no increase of pulsation, and the cervix is not specially characteristic of pregnancy. There is some tenderness to pressure in the right vaginal fornix, just towards the right extremity of the tumour, where the cystic feel is very marked.

At operation, on 9th September, the pregnant uterus was found lying above and to the right of the cystic left ovary. This was removed. The right ovary was found enlarged, but not apparently diseased, and was left intact. The contents of the cyst had the consistency and colour of thick cream, and caked on being put into water.

The recovery went on smoothly, the pregnancy was uninterrupted, and patient went home on 27th September.

The specimen shows the tube and tubal mesentery normal. The interior of the cyst shows a very irregular surface, from several parts of which there is a profuse growth of hair, and in one part a canine tooth projects. The cavity of the cyst after the removal of the thick fluid contents is mostly occupied by a mass of hair matted together, and springing chiefly from one small portion of the wall opposite to the situation of the tooth, each individual hair seeming to be of great length, but so matted with the rest that it cannot be drawn out without breaking. On the outside of the cyst wall project smaller lobules, one of which consists of two loculi, in each of which is a tuft of long hair, and in one a small tooth projects from the base of the tuft. This loculus communicates by a rounded smooth opening with the large cyst, and the bony tissue from which the teeth project forms the base of both.

CASE III.—B. C., aged 14, a healthy-looking girl, has never menstruated, and has had no menstrual molimina.

Eight days before admission on 8th December, 1904, she was seized with sudden pain in the right iliac region while at work. The day was cold and stormy, and she was exposed to the cold and rain for an hour and a half, and at the end of this time the pain came on. She went home to bed, was sick and vomited, but had no rigor. The pain continued all night, but was easier next day, and she went to work till 3 in the afternoon. On the following day she was free of pain, and worked all day, but at night the pain returned even worse than before, and on the day following she observed a swelling in the abdomen. By the following day the pain was entirely gone, and it has not returned. The bowels had not moved for a week, but two days before admission they had moved freely.

On admission, the abdomen below the umbilicus is projected forward by a rounded cystic mass, central in position, and reaching to a fingerbreadth below the umbilicus, slightly movable from side to side and also vertically. There is no pain on palpation anywhere. Signs of puberty on the mons are only slightly developed.

The vulva is infantile. *Per rectum*, the lower part of the cyst presses against the anterior rectal wall, giving the impression there of a cyst with thick wall. No parts corresponding to uterus or cervix can be made out distinctly, but below the tumour anteriorly a slight irregularity is felt, which may be a small cervix. A sound can be passed along the vagina for about  $3\frac{1}{2}$  inches, and passes between the rectal wall and the cyst.

Under chloroform, a small cervix is found projecting from the lower part of the tumour.

At operation (14th December) no torsion of the pedicle was found, and the tumour was removed without difficulty. No cause for the sudden attack of pain could be discovered. The fluid of the tumour was purely serous, and there was no admixture of blood. The right ovary contained numerous enlarged Graafian follicles, and was laid open longitudinally, but no tumour formation was detected, and it was sutured over and returned to the pelvis.

The convalescence of this girl was chequered by an attack of right-sided pneumonia which set in two days after the operation, and by a sharp dry pleuritic attack on the left side six days after that, but her recovery was not much retarded, and she went home on 6th January.

The specimen shows normal tube and mesentery. The ovary is transformed into a cyst with thin walls, except at the base, corresponding to the hilus of the ovary, where there are firmer, thicker parts. On incision over the thickest part, the tissue looks like a lipoma, about the size of a walnut, rising from a flattened base, in which one part shows either cartilage or bone. In the neighbourhood of this is a portion from which a tuft of hair grows—fine hairs, some of which are  $\frac{1}{4}$  inches long. In the wall of the cyst round the dermoid portion are here and there deposits of steatomatous matter of irregularly rounded shape.



A NOTE ON APPENDICITIS IN CHILDREN.<sup>1</sup>

By R. C. DUN, C.M., B.Sc. EDIN., F.R.C.S. ENG.,  
Senior Surgeon to the Liverpool Infirmary for Children.

MUCH has been written on the subject of appendicitis. That this disease is practically confined to young adult and adult life is the impression obtained from a study of the literature. Surprisingly little reference is made to its incidence in children, and only a few statistical and descriptive papers on the condition as occurring before puberty have made their appearance.

That appendicitis is likely to occur, and does occur, more frequently in adult life than before it is beyond doubt; but I do not believe that it is an uncommon affection in childhood, and it is because I hold this view that I venture to bring forward some few points which experience has impressed upon me in connection with appendicitis occurring during the earlier years of life.

I shall not attempt to enter into an exhaustive survey of the subject, or particularise individual cases. My aim is to bring before you some points of practical importance in the diagnosis and treatment of this condition.

The majority of the cases of appendicitis which I have met with in children have occurred between the ages of 10 and 15, when errors in diet, want of supervision of the movements of the bowels, and strains, are more likely to take place than during earlier years. At a much younger age, inflammation about the appendix may, however, be met with; the youngest victim in my own practice was a child of 12 months, while the earliest recorded case was that of an infant 7 weeks old.

It is stated that children are more liable to the graver types of appendicitis than are adults; that abscess development is more common. I do not believe that there is any greater tendency to pus formation in children when the true nature of the case is early appreciated and rational treatment is adopted, but I do know that the surgeon sees relatively more cases in the young in which suppuration has occurred than he does amongst adults. The explanation of this is perfectly clear to my mind. It is to be found in the fact that the earlier and more slight manifestations of appendicular inflammation in children are often not recognised, and therefore

<sup>1</sup> Read at a meeting of the Southport Medical Society, April, 1905.

not efficiently treated, and it is only when the more grave stages are reached that the true condition of affairs is definitely grasped. My point is, that just as in cases of appendicitic abscess occurring in adults, a history pointing to previous slight inflammatory attacks can almost invariably be elicited, so is it in children.

Our first object, then, must be to recognise and interpret correctly that group of slight symptoms which indicate the milder degrees of inflammation of the appendix occurring during child life.

I may say at once that the diagnosis of early appendicitis is much more difficult in children than in adults. This difficulty is due to the similarity of the symptoms with those which result from the more common and simple gastrointestinal troubles of childhood. The group of symptoms which indicate the earlier and more slight appendicitic attacks is somewhat as follows:—Abdominal pain of a colicky nature, usually referred to the umbilicus; slight tenderness in the right iliac fossa; nausea with vomiting—actual vomiting is much more usual in slight cases in children than in those of equal severity in adults; flatulence; tenesmus; and diarrhoea. This last symptom, diarrhoea, is the common early condition of the bowels met with in children suffering from inflammation of the appendix. Constipation is the almost invariable accompaniment in similar attacks in adults. The child is out of sorts, the temperature is normal, and the pulse-rate slightly increased.

These slight symptoms disappear in a few hours, and are so trifling that they frequently attract little or no attention. It is not possible to definitely diagnose appendicitis under such circumstances, but, what I would urge is, that such a combination of symptoms should suggest the possibility of inflammation about the appendix; that we should be suspicious, and particularly so, when such attacks recur from time to time without any obviously exciting cause.

In slightly more severe cases, the diagnosis becomes relatively easier. Additional symptoms now are:—A rise of temperature, usually slight—it may be only 99° F., and is seldom above 103° F.; the abdominal muscles over the right iliac region are “on guard”; and, rarely, an enlarged appendix is palpable.

Two conditions, both infinitely more common than appendicitis, and giving rise to symptoms in many respects similar, have, if possible, to be eliminated. I refer to colic and acute indigestion.

In colic, the pain is usually less severe than in appendicitis, and is not localised. There is no tenderness or fever, and the attacks are of shorter duration. From indigestion, the differential diagnosis is difficult, often impossible at first. The pain is usually less severe than that met with in appendix inflammations; it is not localised, as a rule, but may be confined to the epigastric region. Fever may be present, but there is no tenderness on pressure over the right iliac fossa.

In children subject to attacks of colic and indigestion, we find those factors present which tend to the production of appendicitis. The diagnosis between the milder and more severe conditions is difficult—it may be impossible—in the earlier stage. Safety would appear to me to lie in a full appreciation of this fact. I would not for a moment suggest that we should fall into the habit of diagnosing every case of simple colic or indigestion as appendicitis, but I feel certain that we should strongly suspect recurrent attacks of the two simpler conditions, especially when they crop up in children who are carefully fed and under medical treatment. It is in this way only that we can avoid overlooking the very earliest stages of appendicitis. It is certainly a less serious error to diagnose and treat a case as being one of appendicitic origin when simple colic or indigestion alone are present, than to reverse the mistake. More particularly is this impressed upon us when we consider the urgent call for careful and prolonged medical treatment in the early stages of appendicitis, and the constant risk of serious complications which is so materially increased in neglected cases.

When the inflammation has become periappendicular and a localised plastic peritonitis is present, the diagnosis is not usually difficult. Here, again, I have found diarrhœa to be at first more common than constipation. Muscular rigidity of the abdominal wall is well marked. Distinct local resistance to palpation, with dullness, is present, and the general constitutional disturbance correspondingly greater. The right thigh is by no means invariably flexed; this sign would appear to depend upon the relation of the appendix to the psoas muscle and the amount of the surrounding inflammation. Bladder irritation, as indicated by painful and frequent micturition, and sometimes even by retention of urine, is often noted. The abdominal position of the bladder in children, and its consequent close relation to the appendix, sufficiently explains the occurrence of this symptom.

A bimanual examination made with one hand on the

abdomen and a finger in the rectum often yields important information; a most satisfactory examination of the appendix region in children can be obtained by this means.

Fæcal accumulation can hardly be mistaken for such a condition, in that fever is rarely present, and the swelling is "doughy," painless, and movable, and is frequently to be felt on the left side as well as on the right.

In cases of appendicitis which have advanced to this stage, the diagnosis is not the main difficulty. From a plastic peritonitis to a purulent one is but a step, but it is a step of the utmost importance, seriously affecting both prognosis and treatment. The main question for decision is whether pus is forming or has formed.

The following points are of value in aiding us in the recognition of a local suppurative peritonitis. My experience would lead me to the conclusion that when acute symptoms indicative of appendicitis persist, in spite of treatment, for four days, that abscess formation is taking place. The same conclusion may be arrived at should the temperature remain up though the other symptoms gradually subside, or if the temperature falls to the normal line and subsequently shows irregularity. Rigors rarely occur in children. Should the local swelling persist after all acute symptoms have disappeared, then, again, pus has probably formed. An examination of the rectum often settles the question. By this means, definite fluctuation may be recognised on bimanual palpation. I believe that very great help may frequently be obtained by this method of examination, and it should be put into practice in all doubtful cases. Lastly, a leucocyte count aids us materially in diagnosing the presence of pus. My observations have proved that localised abscess is present when the number of leucocytes per c.mm. is above 15,000.

Chronic abscesses arising from tubercular bone and joint disease, and occupying a similar position to those of appendicitic origin, rarely present any difficulty in diagnosis if the hip, spine, and sacro-iliac articulations are examined.

A breaking down mesenteric or retroperitoneal gland offers more diagnostic difficulty. A thorough examination of the abdomen—and a general anæsthetic may be necessary to carry this out satisfactorily—usually discloses the presence of multiple glandular enlargement in such cases, and suggests the true condition of affairs.

Gangrenous appendicitis, with perforation and general peritonitis, is occasionally met with in children. The signs

of general peritoneal infection are distinctive, and mask those of appendicitis. There may be little to guide us as to the cause of the peritonitis, but careful inquiry will frequently elicit a history of symptoms which point to the appendix as the probable source of infection.

There is little difficulty in differentiating such cases from those of acute intestinal obstruction, *e.g.*, intussusception, internal hernia, &c.

*Treatment.*—In cases even of the mildest type the child should be kept in bed for several days after all symptoms have disappeared. A fluid diet only should be given at first, and, while vomiting lasts, I think it wiser not to attempt anything by the mouth except, perhaps, sips of very hot water. The pain in such slight cases is never severe enough to call for the administration of morphia; hot fomentations are sufficient to relieve it. The question of the use of purgatives has been, and is, much debated; personally, I avoid them, making use of enemata if constipation is present. It is a safe rule to treat suspicious attacks of recurrent colic on the above lines.

The question of operation may have to be considered in connection with these slight cases. My view is, that when a child has gone through several—say two or three—attacks of mild, definitely diagnosed appendicitis, it is the right thing to remove his appendix. The operation itself is practically without risk, and the patient is at once freed from the dangers of subsequent attacks, abscess formation, and perforation. At the same time, I deprecate most strongly any tendency to excessive operative zeal. Attacks of pain merely *suggestive* of appendicitis do not warrant, much less call for, a laparotomy.

Where the appendix inflammation has spread to surrounding structures and localised peritonitis is present, the removal of the offending organ is advisable, as soon as all acute symptoms have subsided. The treatment of such cases before operation should be on lines similar to those sketched for the milder degrees. Opium in any form is, in my opinion, best avoided; dangerous symptoms may be masked by it, and belladonna internally and externally, with hot fomentations, gives satisfactory relief from pain. While waiting for the so-called "quiescent period," a most careful watch must be kept for the indications of pus formation. I have mentioned previously the principal points on which this diagnosis is made. No stress need be laid on the great importance of an early recognition of abscess development, for, as soon as pus has

formed, operative measures for its evacuation are immediately called for. During the performance of an operation for appendicitic abscess, the question as to the removal of the appendix at the same time always presents itself. There can be no doubt that if the appendix be found lying free in the abscess cavity, it should be taken away; but the risks of general peritoneal infection which accompany attempts to remove a very firmly-adherent appendix, associated with localised abscess, are so great that I do not consider it advisable to run them. Should symptoms arise later on in cases where it has not been deemed safe to remove the appendix when draining the abscess, a subsequent operation for its excision can be carried out without risk, after the abscess cavity has closed.

Where perforation of an appendix has been followed by acute general peritonitis, operative interference offers the only hope of saving life. Probably the best procedure to adopt is the rapid removal of the appendix through an incision in the usual situation, and the insertion of a large drainage-tube at this point, together with the use of three other tubes introduced through incisions in either flank, and in the middle line in front, just above the pubis. Irrigation, with saline solution, through all four tubes, is then employed.

The points which I wish to emphasise are—That appendicitis is not an uncommon disease in children; that it does not at first tend to be of a more serious type than in adults, but that the slighter cases are often difficult to diagnose, and are therefore apt to be overlooked. I would urge a closer attention to recurrent attacks of colic, and point out the frequency with which diarrhoea and bladder irritation are associated with appendix inflammation in childhood. When several slight attacks of appendicitis have occurred, the removal of the appendix is the best and safest treatment. Where localised peritonitis is present, operation should be delayed until the quiescent period is reached, but pus formation must always be suspected and carefully watched for during the waiting period. Should abscess formation take place, immediate operation is demanded, but undue risks should not be run in attempting the removal of a firmly adherent appendix under such circumstances. The administration of purgatives and opium is not without risk, and is, I consider, best avoided.

## ON THE AMYLOLYTIC ACTION OF URINE.

By GEORGE H. CLARK, M.B., D.P.H.,

Assistant to the Professor of Physiology in the University of Glasgow.

It has often been observed in physiological laboratories that when starch is mixed with urine there is considerable difficulty experienced in obtaining the blue reaction on the addition of a solution of iodine. As this difficulty was also experienced when starch was mixed with a pure solution of urea, that substance was supposed to be responsible for the non-success of this reaction.

In some instances where starch and urine were mixed, a small amount of sugar was afterwards detected, but this was supposed to be an impurity in the starch used.

It is undeniable that the presence of urea does interfere with the iodine reaction on starch; but it is difficult to understand why, when a solution of pure starch is mixed with urine, sugar should be found in considerable quantity after a few hours at a temperature of, say, 16° C.

To verify these statements, on 5th April I placed in stoppered bottles the following solutions:—

- (a) 100 c.c. solution of starch + 10 c.c. urine.
- (b) 100 c.c.               "               + 10 c.c. 2 per cent solution of urea.
- (c) 100 c.c.               "               alone.

These were placed on a sand bath, and kept at a temperature of 38° C. for twenty-four hours.

At 11 A.M. on 6th April, on testing these solutions with Fehling's solution, I found that bottle (a) contained a large amount of sugar, while (b) and (c) showed no trace of sugar. A control experiment was performed with a different urine next day, and yielded the same result. Before mixing the solutions, the urine and the solutions of starch and urea were tested carefully for sugar with a negative result.

As it seemed possible that the change in bottle (a) might be due to the acidity of the urine, a second series of bottles were placed over the sand bath for twenty-four hours:—

- (a) 100 c.c. solution of starch + 10 c.c. urine + thymol.
- (b) 100 c.c.               "               + 10 c.c. urine neutralised with caustic potash.
- (c) 100 c.c.               "               + 10 c.c. urine + excess of caustic potash.
- (d) 100 c.c.               "               + 10 c.c. 2 per cent solution of urea + acid phosphate of soda.
- (e) 100 c.c.               "               + acid phosphate of soda.

On examining next day, solutions (a) and (b) gave positive results, and in (a) the amount of sugar present was considerable. In (c), (d), and (e) no sugar was found.

After forty-eight hours on the sand bath the relative results were still the same. Thus there was present in the urine a substance—which was not urea, and which did not work in an alkaline medium—that had the power of converting starch into sugar. The presence of thymol in no way affected the action of the substance. The amount of thymol added was large, and must have acted as a germicide to any micro-organisms which had access to the solutions.

It was necessary, in the next place, to ascertain whether this amylolytic substance was a salt, or was of the nature of an enzyme or soluble ferment. With this object in view, I made a series of solutions similar to the above, in which bottles, urine, and solutions were completely sterilised by prolonged boiling. In no instance was there the slightest trace of sugar discovered after the solutions had stood for twenty-four hours or for seventy-two hours. The amylolytic substance was, therefore, destroyed by heat, and was not a salt. The activity of a salt would not be affected by boiling.

Having thus determined that the amylolytic substance which was destroyed by heat, but the action of which was not arrested by thymol, was not a salt, I then attempted to isolate the substance, and to obtain it in as pure a form as possible.

To precipitate the substance from the urine I added to it five times its bulk of absolute alcohol, and removed the precipitate by filtration. The residue, when dried, was a white amorphous powder. It contained chlorides, sulphates, and phosphates, but it also contained a substance which acted upon the starch solution as described above.

The filtrate, both before and after the evaporation of the alcohol, yielded no such result. The powder, therefore contained the amylolytic substance which had been present in the urine. I observed, however, that a solution of the powder obtained by precipitation with alcohol was much less active than the urine itself, and that although in course of time all the starch was converted into sugar, the time taken to complete the reaction was longer than with the normal urine. A glycerine extract was made by concentrating the urine by evaporating at a low temperature, and pouring a layer of glycerine over the semi-solid residue. The glycerine was afterwards drawn off.

This glycerine extract was found to be very active, far exceeding the activity of the powder, or even that of the urine itself.



The amylolytic substance was found to act best in a medium that was almost neutral. A little alkalinity was favourable, but a small amount of acidity appeared to inhibit the action to some extent. The presence of chlorides, phosphates, or sulphates was found to have no effect. These results point to the presence of an amylolytic enzyme in urine. Several repetitions of the experiments yielded the same results.

Where the enzyme comes from, and what is its action in the body, remains to be discovered, and I am engaged in this research.

The amylolytic body may be formed in the bladder or urinary passages; but if it is eliminated by the kidneys, one cannot help thinking that it might be injurious if retained in the blood. If thus retained, any carbohydrate, such as starch or glycogen, in the blood might become hydrolysed into sugar. It is not improbable that in these circumstances a diabetic condition would result. This consideration led me to examine the action of diabetic urine. Five samples were obtained from different patients, and to get rid of the sugar it was destroyed by fermentation with yeast. When it was found that sugar no longer existed in the fermented urine, 20 c.c. of each was added to 100 c.c. of starch and placed on the sand bath for four days, samples being withdrawn and examined at intervals.

*In no instance was any sugar detected. The diabetic urine evidently did not contain the amylolytic ferment.*

This seeming verification of the theory suggested above is open to this objection—May not the fermentation by yeast kill the enzyme if it is present? So far I cannot answer this question, but I am investigating the matter.

Where the amylolytic enzyme is secreted cannot at present be stated. We might suppose it to be pancreatic amyllopsin, reabsorbed and then eliminated by the kidneys. Were it a colloidal substance it is difficult to understand how this could take place. Thus it may be a crystalloid. This point also I am investigating.

I find reference to the amylolytic action of urine in vol. i of the *Journal of Anatomy and Physiology* (p. 111), where, in an article by Foster, Béchamp and Cohnheim are referred to as having first described this action. References also occur in Hammarsten's *Physiological Chemistry* (p. 376), Green's *Soluble Ferments* (p. 35), and Foster's *Text-book of Physiology* (vol. ii, p. 683).

## CURRENT TOPICS.

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**GRIEVE LECTURESHIP IN PHYSIOLOGICAL CHEMISTRY IN THE UNIVERSITY.**—The late Dr. John Grieve, of Glasgow, bequeathed funds to the University for the endowment of a lectureship on Physiological Chemistry, and last month the Court appointed Dr. Edward Provan Cathcart to the lectureship. Dr. Cathcart graduated M.B., Ch.B. Glas., in 1900, and M.D., with honours, in 1904. Subsequent to graduating M.B., he acted both as house physician and house surgeon in the Western Infirmary. Proceeding to Munich in 1901, he worked at chemistry and bacteriology in the Hygienic Institute of the University there under Professor Martin Hahn, and at physiological chemistry under Professors Voit and Cremer. In the following year he studied under Professor Salkowski in Berlin, and whilst there devoted special attention to the clinical application of chemistry. In 1903 he was appointed research student in pathological chemistry in the Lister Institute of Preventive Medicine in London; this post he held until February of this year, when he was offered, and accepted, a position on the permanent staff of the Institute as assistant bacteriologist. Dr. Cathcart thus comes well-equipped, and we wish him every success in his new post.

**SCOTTISH VOLUNTEER AMBULANCE TROPHY.**—The second annual competition for this new National Ambulance Trophy, which was instituted last year by the Scottish Volunteer Medical Officers' Association, was held on Saturday, 13th May, in the Drill Hall, Dundee. Surgeon-General Sir William Taylor, M.D., K.C.B., K.H.P., late Director-General, Army Medical Service, and Honorary President of the Association, presided, and he was supported by a brilliant gathering of officers and others interested in the movement. Among those present were Colonel Hughes, M.B., D.S.O., the Principal Medical Officer of the Scottish Command; Lieut.-Colonel Babbie, V.C., C.M.G., of the Army Medical Staff, representing the Headquarters of the Medical Department of the War Office; The Marquis of Tullibardine, D.S.O., Commanding Scottish Horse, Imperial Yeomanry; Surgeon-Colonel Johnstone Macfie, President of the Association; Colonel Geo. T. Beatson, C.B.; Colonel Hill, Dundee; Surgeon-Lieut.-Colonel

A. Duncan Fraser, Falkirk; Surgeon-Major Sewell, Helensburgh; Surgeon-Majors Lennox, Kinnear, Angus Macphee; Major Dryden Moffat, &c. Twenty teams were entered for the competition as against fourteen last year, and these represented regiments in Glasgow, Edinburgh, Dundee, Perth, Aberdeen, Montrose, Arbroath, Kilmarnock, Hamilton, Helensburgh, Cardenden, &c. The examiners were—*Drill*: Brigade-Surgeon-Lieut.-Colonel Q. Chalmers, M.D., H.L.I. Vol. Inf. Brigade, Glasgow; Major C. C. Fleming, M.B., D.S.O., R.A.M.C., Glasgow; Major J. M'Gregor-Robertson, M.B., R.A.M.C. Vols., Glasgow. *First-aid and Bandaging*: Lieut.-Colonel R. J. Geddes, M.B., D.S.O., R.A.M.C., Maryhill; Surgeon-Major R. Balfour Graham, A.M.R., 1st Fife R.G.A.V., Leven; Surgeon-Major R. Stirling, M.D., A.M.R., 4th V.B.R.H., Perth. *General Knowledge (including Anatomy and Physiology)*: Hon. Staff-Surgeon J. Macintyre, M.B., R.N.V.R., Glasgow; Surgeon-Major T. F. Dewar, M.B., Fife and Forfar I.Y., Arbroath; Major J. G. M'Naught, M.D., R.A.M.C., Edinburgh. At the close it was intimated that the team from the H.L.I. Brigade Bearer Company, Glasgow, headed the list with 239 points out of a possible 300, the 2nd V.B.S.R., Hamilton, coming second with 225 points, and the "B" Team of the 1st Lothian Brigade Bearer Company third with 218.5 points. Surgeon-Major A. Macphee then formally returned the trophy on behalf of the Glasgow Highlanders, who were the winners last year, and Sir William Taylor asked Lady Baxter to hand it over to the winning team. Badges were also presented to members of the first, second, and third teams. Major A. Dryden Moffat replied on behalf of the winners, and Sir William Taylor congratulated the various teams on the decided advance that had been made during the past year, not only in the number of entries, but in the quality of the work all round. Votes of thanks were proposed to Lady Baxter and to the arbiters by Surgeon-Majors Lennox and Kinnear, and responded to by Sir George Baxter and Lieut.-Colonel Geddes, D.S.O., respectively. In the evening the dinner of the Association was held in the Royal Hotel, Dundee, and was attended by a large number of medical officers from the various districts. A company of about thirty medical officers attended the function from Glasgow, while contingents also represented Stirling, Falkirk, Perth, Edinburgh, and other districts. The competition will take place next year in Edinburgh.

ROYAL LUNATIC ASYLUM, GARTNAVEL.—The Ninety-first Annual Report of this institution has just been issued. In

addition to the directors' report, there is that of Dr. Oswald, the Physician-Superintendent. This is interesting reading, and is supplemented by numerous tables of medical and economic statistics. The admissions during the year numbered 130, and of these 17 sought admission voluntarily. Twenty-five out of 74 men admitted belonged to the class of "brain-worker," a percentage of some significance. The death-rate all over was low—6 per cent on the average number resident. Dr. Oswald's report mentions, further, the sanatorium treatment which has been tried for acute mental cases; we quote the following:—

"I reported last year that a trial was being given to the treatment of acute mental cases by rest in bed in the open air. At first the cases were limited to those suffering from depression, but of late cases of acute excitement have been so treated, and the results are distinctly encouraging. The general treatment is similar to that adopted in sanatoria for consumptives, but with us the patients are the subjects of cerebral and not of pulmonary disease, although the symptoms may be in both the result of toxin-producing micro-organisms. We find that the patients keep their beds better than in the wards, that natural sleep returns sooner, that their physical condition rapidly improves, and that the prolonged exposure to fresh and often rapidly moving air calms excitement and induces rest. Last, but not least, the patients like it themselves, and give expression to the improvement it brings about in their state of health."

The above passage is illustrated by the summary of a case of acute mania.

We notice, also, the catering for the amusement of the patients. This takes the form of outdoor and indoor games, concerts, dances, &c. From a perusal of Dr. Oswald's report we are quite prepared for the very favourable reports of the Commissioners in Lunacy which follow. The reports of the steward and gardener conclude this interesting publication.

"THE GARTNAVEL GAZETTE."—We have received the last number of the above *Gazette*, a quarterly publication, giving an account of "the amusements and recreations and of the lighter side of our life." The number contains many readable articles, besides notes on golf competitions, cricket, bowling, &c.

Of special interest to Glaswegians is E. F. C.'s article on "The Lands of Gartnavel." In this we find a historical account of the acquisition of the ground in 1841. It requires a stretch of the imagination for the present generation to

conceive of a country road extending from the Normal School to the Asylum buildings, a road which is now bordered by densely peopled "lands" of houses, by terraces and by villas innumerable; but such was the condition when the Asylum was first opened. "Natural History Notes," and "The Newest Dove Colony," however, breathe a spirit of things rural, and show us that the air and surroundings of Gartnavel still possess the unfailing charm of the country.

We regret that we cannot note all the good things in which the *Gazette* abounds, but we must not close without congratulating the Editor on the extremely successful result of his labours now before us.

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## MEETINGS OF SOCIETIES.

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### GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

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SESSION 1904-1905.

MEETING IV.—9TH JANUARY, 1905.

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*The President, PROF. ROBERT MUIR, in the Chair.*

#### I.—REMOVAL OF THE PHARYNX AND A PORTION OF THE LARYNX.

BY DR. T. K. DALZIEL AND DR. WALKER DOWNIE.

*Clinical history by Dr. Downie.*—The operation about to be described by Dr. Dalziel was performed on a woman, 60 years of age, whom I first saw towards the end of January, 1904.

At that time she complained of pain and difficulty in swallowing, which had been present more or less for twelve months. The pain was referred to the neighbourhood of the lower border of the right tonsil, and it was often so severe that she preferred to go without food rather than suffer the pain which accompanied the act of swallowing.

On examination at that time, a slight fulness of the right lateral wall of the pharynx was seen, and there was a small fissure on the right glosso-epiglottic ligament, neither of which

appeared of serious significance. There was a slight narrowing of the mouth of the gullet, but a No. 15 œsophageal bougie was passed without difficulty.

The pain was considerably relieved by the use of the iodide and bromide of potassium combined.

Some months later she was again seen by me, when she complained more of difficulty than of pain on swallowing. There was increased swelling around the mouth of the gullet—the larger bougie could not be passed—and there was enlargement of the glands immediately beneath the angle of the right jaw. The condition was diagnosed as most probably malignant. She was dieted, and requested to come into the infirmary should the difficulty in deglutition increase; but she remained fairly comfortable, and was able to take a sufficient supply of food until July, on the 3rd of which month she was admitted to the Western Infirmary under my care.

The difficulty in swallowing had seriously increased, and the act was accompanied by severe pain shooting up to the right ear. On inspection, a sessile outgrowth was seen springing from the posterior wall of the pharynx, the upper border of which was at about the same level as the epiglottis, and its surface was ulcerated. There was also tumefaction and ulceration of both arytenoids and of the inter-arytenoid membrane, which, together with the pharyngeal lesion, amounted to a ring of ulceration, with a broad, hard base, around the mouth of the gullet. I did not think that any local operation should be advised, but with the view of feeding the patient and of giving the affected surfaces rest, I advised gastrostomy.

Dr. T. Kennedy Dalziel saw her with me in consultation, and, after agreeing with the diagnosis and the operative treatment recommended, suggested that an attempt might be made to excise the affected parts. While I feared that the disease could not be eradicated, the proposed attempt to remove it was, I agreed, justifiable. The radical operation was thus decided upon, and was performed by Dr. Dalziel, and the result far exceeded my expectations, the affected structures being, as he will tell you, very successfully excised.

Dr. Dalziel described the operation for the removal of the tumour. An incision was made from the angle of the jaw to near the sterno-clavicular articulation, a tracheotomy tube having previously been inserted. The sterno-mastoid muscle was drawn backwards; the blood-vessels passing to the pharynx, the lingual and the facial arteries were each

ligatured in turn; thereafter, the wall of the pharynx was freely exposed and separated from the spine. An opening was made immediately behind the tonsil, and the scissors carried along the upper border of the superior constrictor, first on the exposed side, and then on the other side, cutting from within outwards. The pharyngeal blood-vessels were ligatured as divided. The œsophagus was then cut below the level of the cricoid cartilage, the end of the œsophagus brought to the skin and stitched to the lower angle of the wound. Thereafter the included portion of the pharynx was removed. It was found necessary to remove the posterior part of the thyroid cartilage, which was evidently involved in the malignant growth, together with the arytenoid cartilages. During the dissection, to expose the wall of the pharynx, a mass of malignant glands was removed. The wound was packed with gauze, and a tube introduced into the œsophagus and stitched to the skin at the lower angle of the wound, that feeding might be carried on without disturbing the wound or dressings. Although the patient was over 60 years of age and for long of intemperate habits, there was no appreciable shock after the operation. Her temperature remained normal, and her pulse at no time exceeded 90. The patient returned home in the fourth week, remarkably well, able to resume her household duties, and nursed her husband and son through critical illnesses. Unfortunately, there had recently been an intra-thoracic development of cancer, which prevented her attending the meeting. There is no doubt the patient's life has been materially prolonged, and her dreadful sufferings got rid of. It was hardly possible to hope, from the extent of the disease at the time of operation, that a cure could result, but as an operation to alleviate suffering and prolong life, there is no doubt as to its utility. There being no passage from the mouth to the œsophagus, the patient was much troubled with dribbling of the saliva, but, ere a few more weeks had passed, this secretion lessened so much that she had rarely to use her handkerchief.

## II.—MULTIPLE CARCINOMA OF THE INTESTINE.

By DR. JOHN H. TEACHER AND DR. G. BURNSIDE BUCHANAN.

*Clinical notes by Dr. Buchanan.*—James B., aged 54, was admitted to the Western Infirmary on 21st September, 1904, suffering from great emaciation, with history of vomiting and diarrhœa.

A tumour of indefinite shape and size was detected in the umbilical region on admission, but its varying character made it seem probable that it was a mass of fæces. There was marked succussion of the stomach, and distension with air showed that there was considerable dilatation. In the rectum a large, firm, rounded mass, apparently fixed to the anterior wall, almost blocked the passage. The patient suffered considerably from distension of the bowels, due to some obstruction, and it was decided to try and relieve his distress by opening the colon.

*30th September.*—On making an opening in the left inguinal region under local anæsthesia, it was found immediately that the intestines were matted together, so the first piece of intestine presenting (a piece of small intestine) was fixed in the wound.

The patient, who was in a very emaciated and feeble condition, died the following day.

*Post-mortem report by Dr. Teucher* (by permission of Professor Muir).—The body was extremely emaciated; the abdomen relatively tumid. The thoracic organs showed nothing of importance. The peritoneal cavity contained about two and a half pints of pus, which was limited by adhesions to the right half of the abdomen, and did not appear in the neighbourhood of the operation. It occupied especially the lower part of the abdomen around the caput cæcum and a large cavity extending upwards in the right flank, external to the ascending colon, to the under surface of the liver. The coils of small intestine were glued together by gelatinous adhesions of varying degrees of firmness. The lower coils, and especially those near the ileo-cæcal valve, were thickened and contorted, and the mesentery to which they were attached was thick and hard. This was found to be due to cancerous growth, apparently in the glands, with diffuse thickening and contraction of the surrounding tissues. The mesentery was here much shortened, and the coils of intestine drawn in. Here and there in the lower half of the intestine were nodular growths in its wall, apparently spreading back to it from the mesentery, and at several places the mucous membrane over them had begun to ulcerate. For two or three feet upwards from about a foot above the ileo-cæcal valve, the nodules were almost continuous with one another, the mesenteric border of the intestine was shortened, and its lumen rendered very tortuous. At the lower end of this portion of bowel, the ulceration over one of the tumours had



passed right through the wall, and a portion of the latter formed a small gangrenous slough. This perforation had been the source of the suppurative peritonitis. In the submucous coat of the intestine, just above the valve, was another nodule about the size of a filbert.

Here and there in the whole course of the great intestine, tumour nodules were present in the submucous coat to the number of about twenty altogether. They were for the most part flattened; some were very small, but others were of considerable size, almost spherical in shape, and projected into the lumen of the bowel. The mucous membrane over them was intact. The largest of them was about three-quarters of an inch in diameter.

About an inch above the anus, there was a flattened mass of similar nature in the wall of the rectum, for the most part situated posteriorly, but almost encircling it. This had caused some contraction. The mucous membrane over it was not involved. The tumour occupied the muscular coat and the tissues outside that to a thickness of about three-eighths of an inch. This was taken to be the primary tumour.

No secondary growths were discovered apart from those already mentioned. The infiltration of the mesentery did not occupy its whole extent by any means; there was no infection of the glands along the iliac arteries, nor along the front of the vertebral column, nor at the root of the mesentery, nor in the mesocolon.

The peculiar distribution of the growth is a puzzle, most of all in respect of the scattered nodules in the great intestine. The rectal tumour was taken to be the primary, because it was the largest; the histological structure of the growths (columnar-celled carcinoma) seemed to indicate origin from the great intestine. Extension to the root of the mesentery, and then a spread downwards to the gut, is out of the question, although in the one limited area mentioned this appeared to be what had taken place. Neither was there any evidence of infection of the blood-stream. It almost looked as if, in regard to the isolated nodules, there had been an emigration of the elements of the tumour along some channels in the intestinal wall, and a settling and growth of them here and there.

### III.—MULTIPLE CARCINOMA OF THE COLON.

By DR. HENRY RUTHERFURD.

Dr. Rutherford showed specimens from a case of multiple carcinoma of the colon.

## IV.—NOTES ON TWO CASES OF INFANTILE OR ENCYSTED HERNIA.

BY DR. D. N. KNOX.

This is a very rare form of inguinal hernia. I do not know of any specimen of this hernia having ever been shown at this Society before. While rare, its features are well known. They were first described by Mr. Hay, of Leeds, who on 6th November, 1764, made a *post-mortem* dissection of the body of a child, 15 months old, who had died from strangulation of the hernia. Mr. Hay found that the processus vaginalis was closed only at the abdominal ring, and that the peritoneal sac had simply invaginated the upper end of the process down into the body of the tunica vaginalis. As the processus vaginalis closes in this way at or shortly after birth, he therefore gave the name of *infantile* to this variety of hernia. Sir Astley Cooper afterwards made a drawing of this form from a specimen, and gave it the name of *encysted* hernia. In anatomical text-books, two forms of infantile hernia are shown in diagram—the encysted, and another in which the sac lies behind the tunica vaginalis. As to this latter form, I am very doubtful of its right to be called infantile, as it seems to me that it would be very easy for a surgeon to open the hernial sac by merely moving aside the tunica vaginalis, and that the infantile condition of the tunica has nothing whatever to do with the protrusion. I agree with those recent writers who consider all infantile herniæ to be encysted. The two cases that have fallen under my notice have both been encysted.

The first was a child of 2½ years, who was admitted to Glasgow Royal Infirmary about fifteen years ago with strangulated inguinal hernia on right side. On cutting into what at first sight seemed the sac, I found a small purple elongated tumour projecting downwards into a large serous cavity. This tumour looked like bowel covered by serous membrane. After a little examination, and guided by Cooper's diagram, I recognised it as an encysted hernia. I carefully cut through the serous covering and the sac, and reduced the hernia. I then ligatured and cut off the sac and the invaginated portion of the tunica vaginalis, sutured the sides of the inguinal canal, and then closed the tunica vaginalis. The child made a perfect recovery. I am sorry to say that this specimen has been lost.

The second case is a man, aged 72 years, admitted to my wards on 18th December, 1904, with symptoms of obstructed irreducible inguinal hernia. The tumour was very large, about the size of a cocoanut. It was situated over the external inguinal ring, and did not descend into the scrotum. The right testis could not be felt in the scrotum, and was thought to be undescended. The hernia had existed as long as the patient could remember, and had slowly grown in size. He had never had any trouble with it till two days before admission, and had never worn a belt. His occupation was that of coalman, and for thirty years he had carried bags of coal on his back up stairs. On the morning after admission, I proceeded to perform herniotomy. The skin and integument were very thin from long pressure, and easily cut through, but then I found I was in a large serous cavity, with a flattened, atrophied testis at one side of the presenting tumour. I then cut through the inner wall or invaginated portion of the tunica vaginalis and the sac of the hernia, finding a mass of large intestine in the interior. There were no adhesions, but I required to enlarge the opening in the abdominal wall slightly before I could reduce the bowel. I then separated the hernial sac, stripped it up, ligatured it, and cut it off. Then, to clear the opening of the canal and to secure closer approximation of its sides, I removed the invaginated portion of the tunica vaginalis, on which you see the atrophied testis. I brought the conjoined tendon down behind Poupart's ligament by sutures, and, lastly, as the skin covering of the hernia was so thin, I left the outer layer of tunica vaginalis to strengthen it. The case has done well, the wound being now practically healed. Seeing that the testis had not descended, I thought the hernia would prove a congenital one, as is generally the case. I did not expect an infantile. Perhaps the explanation may be that, in the steady and unimpeded growth of the hernia, the sac of the tunica vaginalis may have been drawn up and stretched laterally by the protrusion of a mass of large intestine that was not free to descend into scrotum.

The *President* thanked Dr. Knox for presenting these very rare cases to the Society.

*Dr. Rutherford* questioned Dr. Knox's interpretation of the second case, but the explanation offered in reply by the latter appeared to be quite satisfactory.

V.—REPORT AND DESCRIPTION OF SPECIMENS OF FIVE CASES OF UTERINE MYOMA, AND THREE CASES OF OVARIAN DERMOID TUMOUR.

BY DR. J. K. KELLY.

Dr. Kelly's paper appears as an original article at p. 401.

VI.—CASE OF PATENCY OF THE INTERVENTRICULAR SEPTUM.

BY DR. ALEX. NAPIER AND DR. JOHN ANDERSON.

The details of this case will be published as an original article in a future issue of the *Journal*.

VII.—CASE OF TUBERCULOUS MENINGITIS.

BY DR. ALEX. NAPIER AND DR. JOHN ANDERSON.

*Clinical history by Dr. Napier.*—D. M'C., aged 27, was admitted into the Victoria Infirmary on 18th December last, in a semi-conscious condition, suffering from retention of urine. When the urine (about 30 oz.) had been drawn off in the surgical wards, the patient was transferred to those of Dr. Napier. His illness had begun eighteen days previously, with shivering, headache, and vomiting, the headache being severe and lasting a week, while the vomiting had persisted for a fortnight; it occurred chiefly after each meal. For a week before admission there had been pain and swelling of the lower part of the abdomen, accompanied by retention of urine; during the same period there had been pain in lumbar region and down the spine. Three years ago patient had had "inflammation of the bowels."

*Condition on admission.*—Feverishness, temperature being 101° F.; loss of appetite; constipation; dry, brown, and fissured tongue; delirium well marked, though occasionally intelligent answers could be got; pupils equal and contracted; corneæ sensitive; face moist, with a slight malar flush; chest and abdomen reddened by hot applications, but in the redness could be seen a number of red and slightly raised spots that disappeared on pressure. "Patient shrinks, and gurgling is heard, when pressure is made in right iliac fossa. The whole abdomen is somewhat tense and distended, and manipulation seems to cause pain, especially over the pubes; liver dulness.

indefinable. Lungs normal; heart normal, except that first sound is feeble; no tenderness over spine; knee-reflexes diminished, but not quite absent; slight ankle-clonus; urine normal, had to be withdrawn by catheter; pulse, 120 to 140, and very small and feeble."

The patient was regarded by all who saw him as suffering from enteric fever, notwithstanding the fact that Widal's test twice gave a negative result, the test, however, not having been made with a twenty-four-hour culture, but with an older culture. The spots, the abdominal tenderness and distension, the delirium (exactly like that of the third week of enteric fever), the duration of the trouble (nearly three weeks), the tongue, and the general aspect, all pointed in that direction; while the absence of squint, dilatation of the pupils, and the general signs of cerebral pressure, led one rather away from the diagnosis of meningitis.

Treatment was based on the enteric theory—milk diet, stimulants, glycerine, enemata, &c.

The patient died, apparently from exhaustion, within forty-eight hours after admission.

The following is report of the *post-mortem* examination by Dr. Anderson:—

"*Summary*.—Tuberculous cerebro-spinal meningitis.

"*External appearances*.—A well-developed and fairly well-nourished body. Rigor mortis was pronounced. The pupils were equal, and of medium size. There was a large bed sore at the right trochanter.

"*Thorax*.—The pericardium was healthy. The heart, which weighed  $8\frac{1}{4}$  oz., was of normal size, the chambers were of normal size, and the walls of normal thickness. All the valves were healthy. The left lung, which weighed 20 oz., was non-adherent. On section, it showed the appearances of well-marked passive hyperæmia, and there were a few punctiform hæmorrhages on the visceral pleura. The right lung, which weighed  $23\frac{1}{2}$  oz., was adherent posteriorly to the chest wall and at the apex. On section, it presented similar appearances to those of the left lung, with, in addition, a hypostatic pneumonia of the base. The bronchi of both lungs were intensely congested, and the bronchial glands were enlarged and caseous.

"*Abdomen*.—The peritoneal cavity was healthy. The stomach was of normal size, and its mucous coat healthy in appearance. The intestines were slightly distended. The

wall of the small intestine was dry and somewhat shrivelled in appearance, but no areas of congestion or ulceration of the mucous coat were found, and there was no enlargement of the Peyer's patches. The large intestine was healthy in appearance. The mesenteric glands were enlarged and caseous. The spleen weighed  $4\frac{1}{2}$  oz., and was of firm consistence and congested. The pancreas and adrenals were slightly congested, but otherwise healthy. The kidneys were slightly enlarged, and together they weighed  $11\frac{1}{2}$  oz. Their capsules were non-adherent, and on section they showed evidence of passive congestion, with cloudy swelling. Microscopically, a slight interstitial nephritis was noted as well. The liver weighed 2 lb.  $7\frac{1}{2}$  oz., and showed on section the appearances of cloudy swelling. The gall-bladder was healthy. The urinary bladder was dilated, with thin walls and healthy mucous coat.

"*Head.*—The scalp and calvarium were normal. The dura mater was congested, and the venous sinuses were distended. The veins on the surface of the hemispheres were congested, and the convolutions showed a moderate degree of flattening; while, at the base, the pia arachnoid over the optic chiasma, pons, and part of the cerebellum were slightly thickened and opaque in character, and the limbs of the Sylvian fissures were slightly adherent together. The appearances, although suggestive of tuberculous meningitis, were not so extensive as those usually seen in such cases. On section, the brain showed congestion, with slight excess of fluid, and the ventricles were slightly dilated, with softened character of their walls.

"*Spinal cord.*—The spinal dura was hyperæmic. The pia arachnoid of the cord was distinctly thickened and congested, and, in the lumbar region, its opaque appearance was well marked.

"Microscopic examination of the membranes, brain, and cord showed the case to be of the nature of a tuberculous meningitis. The vessels of the pia arachnoid were congested, and there were cellular aggregations in their walls, while the membrane itself was highly cellular. One or two giant cells were seen in the membrane from the base of the brain, while tubercle bacilli were found in it and in the membranes of the cord. Areas of round cells were seen passing into the brain substance and invading the nerves which arise from the cord, while the ganglionic cells of the cord showed chromatolysis and pigmentation, in addition to *post-mortem* changes."

## OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1904-1905.

MEETING V.—22ND FEBRUARY, 1905.

*The President, DR. J. K. KELLY, in the Chair.*

## I.—SPECIMENS.

A. BY DR. J. K. KELLY.

1. Pregnant uterus with a dermoid cyst of the ovary, removed from a patient who suffered from uncontrollable vomiting of pregnancy. The patient died of hæmorrhage from the bowel.

2. A myoma enucleated from the uterus of a patient, æt. 22.

3. A myoma removed by enucleation, followed by hysterectomy.

B. BY DR. SCOTT M'GREGOR.

1. Small cervical fibroid attached by an attenuated pedicle to the cervix, the pedicle consisting of blood-vessels alone, which fed the tumour. The pedicle had ulcerated, with the result that a most alarming hæmorrhage ensued, the patient passing clots as large as one's fist.

2. A fibroid growing on and involving the antero-lateral lips of the cervix, causing a hypertrophy and prolongation of the part involved, with protrusion outside of the vagina of the fibroid tumour, and consequent resulting ulceration of its exposed surface, giving the appearance of an elongated cervix with erosion.

## II.—DISCUSSION ON THE TREATMENT OF ENDOMETRITIS.

*Dr. Oliphant* introduced the discussion by reading the following paper:—

When your secretary asked me if I would be willing to open a discussion on the treatment of chronic endometritis, I am afraid I did not realise the difficulty of the task, nor my ignorance. However, this is to be a discussion; so I mean to lay before you a few of my difficulties, in the hope that I, at anyrate, may get some enlightenment from the experience of other Fellows to-night.

We are met by the initial difficulty—what is chronic endometritis? In a paper read some years ago in this room, before one of our kindred societies, by one of our former presidents, the author said, by implication if not directly, that chronic endometritis was the result either of gonorrhœa or of abortion. From that view of the subject I must express my dissent, though Dr. Pollok is not alone in his opinion. For example, if we turn to the text-book of Dr. Howard Kelly, of Baltimore, we find this statement, "Chronic endometritis is rather rare. The prevailing habit of describing all scrapings, particularly because of their abundance in some cases, as examples of endometritis, is greatly to be deplored. It interferes with our getting any satisfactory idea as to the frequency of the real affection, and tends to encourage unnecessary operating. The so-called 'fungoid endometritis' is not a pathological entity at all, and the name ought to be expunged from gynæcological works.

"Chronic endometritis is oftenest associated with old cases of pyosalpinx; it is rarely ever found in the ordinary scrapings.

"The slight liability of the uterine mucosa to this affection may be ascribed to two factors. In the first place, the tendency of pus-containing tubes is to complete closure at the uterine end, and so shutting off one avenue of infection [this makes it clear that Kelly believes the endometritis to be caused by the pyosalpinx]; and, in the second place, the form and position of the uterine canal are such as to afford good drainage."

We were told in this room on another occasion that pyosalpinx was caused by intra-uterine applications; but if pyosalpinx is the cause of the endometritis, what is the original condition of the uterus for which the intra-uterine applications have been made that in turn cause the pyosalpinx?

By chronic endometritis I understand a common condition which we meet in a large proportion of the women coming to the out-patient department of our hospitals, and in a not much smaller ratio in private practice also; that is, if by the name endometritis we include catarrhal affections of the cervical mucosa, as well as the more severe forms which are associated with enlargement of the uterus, and accompany the states named congestion, hypertrophy, areolar hyperplasia, sub-involution, or metritis, according to the etiological hypotheses of the sponsors. Metro-endometritis is a convenient if barbarous name to indicate the combined more serious form.



Dr. Thorburn went so far as to say that the gynæcologist might be almost pardoned for considering cervical catarrh as normal, at anyrate in married women. And in spite of what I have just quoted from Dr. Howard Kelly, the affection may be considered so common that no excuse need be offered for choosing it as the subject of to-night's discussion. "The newest and most brilliant achievements of modern gynæcological surgery," says Dr. Thorburn, "are all very well in their way. Ovariectomy, hysterectomy, are most striking in their results when we see them grouped in the practice of the few, but they are concerned with only a small fraction of human suffering compared with that which is daily and hourly, too often vainly, demanding relief at the hands of the great body of the medical profession, on account of chronic inflammatory affections of the uterus. Sometimes as the cause, sometimes as the effect, of other uterine diseases, or of various morbid states of the system, metritis (and by that he means endometritis as well) meets us at every turn, and for want of the time and hygienic conditions necessary to its cure, it continually baffles our efforts at permanent relief." After stating that such cases are apt to be neglected by practitioners, and naturally fall into the hands of quacks, he continues, "The difficulties of the subject depend not only upon the intractable nature of many of the cases, but also upon the obstacles which many meet with in acquiring such a clear knowledge of the pathological facts involved as will fit in with and lead to definite principles of treatment." These words seem as true to-day as when they were written twenty years ago; for so far as my experience and my reading go, pathology does not seem to give us much light on the principles of treatment, which still in many cases remains of little avail. If any of the Fellows who work at pathology are in a position to lay down pathological indications for treatment, I am sure we will all hear them gladly.

The late Dr. Gebhard, in his work on gynæcological pathology, describes various forms which the uterine mucosa assumes in endometritis, according as the inflammatory process attacks chiefly the glandular elements or the interstitial tissues.

First, he describes endometritis glandularis hyperplastica, in which the increased number of the glands reduces the interspaces to a fifth of their normal size. This may be specially marked in the deeper layers from branching of the inner ends of the glands.

Secondly, he describes an endometritis glandularis hypertrophica, in which the glands are increased in size rather than

in number. He lays special stress on the fact that burrowing of the glands into the muscular tissue is not evidence of malignant disease. In their increased length, the glands assume a corkscrew or in some cases a zig-zag course.

In the interstitial forms of endometritis, he describes a condition in which the glands are diminished in number, while the interstitial tissue is increased in amount, and also is infiltrated in the acuter stages with round cells either diffusely or in small masses; and in the chronic stages these cells become spindle-shaped. In the superficial layers the cells become five or ten times larger than usual, and are individually indistinguishable from decidual cells. As the disease becomes chronic, the spindle-cells lead to general cicatricial contraction and to atrophy, with the glands lying obliquely or flat, often forming retention cysts.

The form which is described under the name of endometritis exudativa is specially associated with dysmenorrhœa. In this form the glands are separated, not by increased amount of interstitial tissue, but by dilation of the interglandular lymph channels. These become filled with albuminous inflammatory material, or sometimes with mere serous oedematous fluid, or in other cases with effusions of blood leading to hæmorrhage. This last condition was found in a uterus removed for hæmorrhage (by Gebhard).

You have heard that Gebhard associates his exudative form of endometritis with dysmenorrhœa and with hæmorrhage; the next form in his classification is the exfoliative, or to name it from its clinical features, membranous dysmenorrhœa, a condition as mysterious in its etiology as it is rebellious to treatment.

The formation of the membrane seems to take place just before the onset of the period, as in the intervals between the periods portions of the mucosa removed by curetting are normal in histology. The superficial layers of the mucosa are thrown off more or less in continuous sheets, even in some cases forming a complete cast of the uterus. This form is of the interstitial type, for the glands are diminished in numbers and lie widely separated. The stroma has circumscribed patches of round-cell infiltration. The meshes of the interglandular tissue are filled sometimes with finely granular exudation, sometimes with blood. In these membranes, also, are found large cells like decidual cells; but though these are comparatively few in number and not so clearly visible, considerable caution and much experience are required in establishing a diagnosis between a menstrual membrane and

one thrown off in an abortion. The glands are zig-zag in shape, not from increase in their length, but because of the pulling and stretching of the membrane in its passage through the genital tract. In certain other cases, skin-like casts are expelled which consist of fibrine; possibly these are the cases reported as cured.

That a chronic inflammatory process should continue confined to one element is unusual, so we commonly find the glandular and interstitial types combined, one element predominating at one part of the mucosa, and the other in another part; as a general rule, the interstitial process is more marked in the superficial layers, and the glandular in the deeper layers of the membrane. To this mixed form Gebhard gives the name of diffuse endometritis, and he asserts that it is in this mixed form that we have produced the greatest amount of thickening of the mucosa that we find in benign intra-uterine growths. This thickened mucosa is irregularly raised on its surface, and contains in the hypertrophied interstitial tissue a large number of convoluted hypertrophied glands, often dilated and cystic. The irregular protrusions of the mucosa may go on to actual formation of polypi; at first sessile, they gradually become pedunculated. These polypi are distinguishable from the cervical mucous polypi by their attachment, of course, and by the character of the glands in their substance. They have been termed adenomata, though the tendency now is to restrict that term to malignant growths. In a case recently curetted by myself, the pathologist reported that the scrapings resembled mucous polypi with enlarged glands which had papilliform ingrowths. The stroma showed round-celled infiltration, and contained many thin-walled blood-vessels. I presume that the rupture of these thin-walled vessels had caused the recurrent hæmorrhages which led me to use the curette. This diffuse endometritis, as described by Gebhard, is the fungous endometritis of Olshausen, a condition which, as I have already quoted, Kelly says does not exist.

The literature of the pathology alone is enormous, but the subject for to-night is treatment, so I shall not enter on it nor on the rôle of the ubiquitous microbe in the etiology. Here, too, the literature is overwhelming, and unfortunately the evidence is very contradictory; truly, in multitude of counsellors there is sometimes confusion of wisdom as well as safety.

If, and I admit the if covers a multitude of sins, we exclude the question of prophylaxis, or to put it practically, apart from

asepsis in our manipulations, the microbe does not seem to have much bearing on the principles of treatment.

In regard to the symptoms, I feel disposed to say that there are none characteristic of this disease. We find the common gynæcological symptoms, such as general debility, which, of course, may be a cause rather than a result; weakness in the back; pain in the back or in the iliac regions; infra-mammary pain, one of the most intractable symptoms; leucorrhœa; menstrual disturbances, that is, menorrhagia or dysmenorrhœa; sterility may be the complaint, or, if conceptions do occur, they often terminate in abortions, which are often the reason of the woman seeking advice. By some authors, menorrhagia is called the characteristic symptom; but any or all of these symptoms are found in all sorts and conditions of pelvic disease. I have for years told the students at the dispensary that the patient's history may sometimes give you a hint of what you may expect to find, but that her complaint carries you no farther than to justify you in proposing a pelvic examination; but I am an agnostic, and perhaps some of our Fellows can diagnose endometritis on the lines of a Sherlock Holmes.

In the more severe cases of metro-endometritis, a dragging weight and tenderness is the most distressing symptom, and as it is aggravated on exertion, is probably the chief cause of the invalidism of this class of sufferers.

Before discussing general principles of treatment, let me say a word or two on some particular types. In some of these, the etiology is fairly clear; in others, quite obscure.

I do not propose to speak to-night of the specific form of endometritis arising from gonorrhœa, for that, when it has become chronic, is commonly part of a general inflammation of the pelvic organs, involving the tubes, ovaries, and pelvic peritoneum as well. Nor shall I speak of tuberculosis which, except as part of a general tuberculosis, rarely attacks the endometrium. The gonorrhœal form will probably require to be attacked by operation on the tubes or ovaries, while the tubercular form would require similar treatment if operable at all.

Membranous dysmenorrhœa is the clinical name of endometritis exfoliativa, a condition of which the causes are quite unknown, though it occurs chiefly in married women. Free dilation of the cervix, followed by curetting and the application of escharotics, or intra-uterine drainage, have indeed been claimed as having given good results, but most authors admit, in more or less elegant periphrasis, that the disease is quite

intractable. Arsenic internally may be given a trial, but I am afraid rather as a placebo than in expectation of a cure; and the same may be said of guaiacum.

Senile endometritis, or as Dr. W. L. Reid has named it, senile atresia, is a condition which allows us to speak more cheerfully; for this state of the uterus is usually readily curable, though it often causes symptoms resembling those of cancer. These symptoms have often been described to this Society, and I need not dwell on them, but I may remind you that they come on after the menopause, and that the patient usually complains of hæmorrhage and of offensive discharges, which are so acrid in character as to excoriate the vagina and vulva. The passage of the sound is obstructed, and when it has been forced through the cervix its withdrawal is often followed by a gush of foul-smelling purulent discharge, for the cervical canal has become somewhat prematurely closed after the menopause, probably by old-standing endocervicitis, and the secretions are pent up inside the uterus. When these have sufficiently accumulated they burst through the cervix, and thus give rise to the initial hæmorrhage; the insufficient drainage of the uterine cavity leads to septic infection of its contents, and the discharge becomes purulent, if not so already, and of offensive odour. As in cancer, too, the secretions are often so acrid as to cause much distress.

Hæmorrhage after the menopause is often looked on as a pathognomonic sign of cancer, and it is likely that some of the cancer cures claimed by quacks have been of this nature.

A very moderate degree of dilation, say to No. 8 of the English catheter scale, is sufficient to permit of one or two applications of pure carbolic acid to the endometrium; this is usually enough to improve matters very decidedly, if not actually to completely cure the patient. This is the sort of case that is a satisfaction to patient and practitioner alike.

Perhaps the commonest causal antecedent of endometritis is parturition, either at term or at an abortion. It is not unreasonable to assert that wherever abortion has been incomplete, or where there has been a moderate degree of sepsis, there an endometritis will inevitably follow. If there be some decidua left in the uterus, there will in most cases be troublesome meno- or metrorrhagia; and even a slight degree of sepsis will entail subinvolution, or, as we may call it in this connection, metritis or endometritis. Conversely, endometritis is a common cause of recurrent abortion, and as each

abortion leaves the endometrium worse than before, the process continues in an ever widening vicious circle, until sterility or the menopause interrupts the course of events.

It is obvious that here the treatment *ought* to be prophylactic, and if the profession usually had the treatment of abortions in their own hands, we could make sure that the uterus was thoroughly emptied, and we could at least avoid infecting the uterus ourselves, and this manner of causation might to a large extent be eliminated; but, unfortunately, many women take so little care at such times that they do not give the doctor an opportunity of treating them at all, and do not themselves take any precautions or even rest, so that there is little chance of involution proceeding naturally. Many of our patients, accordingly, already suffer from an endometritis following on abortion when they first consult us.

I think we may say dogmatically that if a woman presents herself two or three weeks after an abortion, complaining of hæmorrhage, and if the bleeding is not arrested in a very few days by rest in bed, and by such drugs as hamamelis, hydrastis, ergot, or viburnum, we should then curette at once.

When a woman suffers from a moderate degree of septic infection after an abortion, with the inflammatory action passing beyond the uterus to invade the other pelvic organs and tissues, it is not possible to give precise indications for local treatment. Each case must be taken on its merits, but I think that if we find the os patulous, and if there are other evidences of some *débris* being left, then we are usually justified in carefully using the curette.

Also, if there is no evidence of pelvic peritonitis, and the endometrium is found unhealthy, curetting is the right treatment, and should be undertaken early, that is if one or two applications to the interior of the uterus have not produced marked improvement in the local conditions.

In the endometritis following labour at term the question is, as a rule, even more complicated. For the woman is often run down in general health, anæmic, and badly nourished; in some cases she has been in poor health previously, and has not been able even to suckle her infant, or she is exhausted by too frequent child-bearing, or, I should say rather, by having borne her children at too short intervals: or she is pulled down by some intercurrent illness, such as albuminuria; or she is worn out by prolonged lactation, as we often find among our poorer classes, who prolong their breast-nursing in the vain hope of postponing the next pregnancy.

In all such cases the treatment must be directed to the improvement of the general tone of the patient in the first instance.

Again, lacerations of the cervix—common when the forceps has not been used, but in too many cases undoubtedly the direct result of the reckless use of instruments—lacerations of the cervix are the exciting cause of the metro-endometritis.

These post-partum cases form a large proportion of our gynaecological patients—cases rebellious to treatment, often incurable, an opprobrium to the profession, the happy hunting-ground of charlatans.

If unhealed tears are found in the cervix, they should be mended; at anyrate, I am a believer in the value of this procedure, for by repairing the wound you close an avenue of septic absorption, the uterus improves in tone, diminishes in size, and in many cases the woman is relieved of her inability to walk or to take any form of exercise. We thus help to lift her from that wretched life of invalidism, to get rid of which should be our chief aim.

The lacerations may be simply repaired, or if there is much hypertrophy or very extensive irregular splitting of the cervix, amputation of a part of the vaginal portion is as easy and more thorough. I see that Dr. Barbour is inclined to doubt that repair of the cervix tends to lighten the uterus, and yet in almost the same sentence he advocates the amputation of the cervix with that object.

I have in a few cases practised ignipuncture of the cervix when it has been hypertrophied, and, I believe, with benefit; at anyrate, it may be tried before submitting the woman to an operation like amputation, which entails some days at least in bed.

Along with or outwith parturition any state or condition leading to congestion of the uterus tends to chronic endometritis. Such exciting causes must be looked for, and removed if possible; thus cirrhosis or congestion of the liver of alcoholic origin must not be overlooked, nor cardiac disease. A few days ago I saw a case of valvular obstruction and incompetence, which I have no doubt was the cause of the menorrhagia complained of; and I recently sent a young woman into hospital who has a retroversion, but whose chief trouble depends, I am satisfied, on a cardiac lesion.

Local causes of congestion must not be missed, such as displacements and flexions. The symptoms in cases of displacement are often due to the resulting congestion and subsequent endometritis. A pessary which simply lifts the

uterus without actually reducing the displacement is often enough to relieve symptoms.

Tumours, such as fibroids, are a common cause; and in those obscure cases of fibroids with high temperature it is probably the absorption from the unhealthy endometrium that induces the fever. After the expression of opinion in this Society a few weeks ago, it may be said without fear of contradiction that the tendency is to treat these cases by removal of the fibroid, with or without the uterus and its appendages, though I see no reason in most cases for removing the ovaries and tubes as well as the uterus. At the same time it may be borne in mind that a considerable number of cases of bleeding fibroids have the hæmorrhage checked by curetting when drugs have failed, and probably the benefit ascribed to the Apostoli electric treatment is due to the action on the endometrium rather than on the fibroid.

Tight lacing is always denied by the patient, and it is of no use to preach about it; but the patients can be advised against too many skirt fastenings round the waist. When the subject has been taken up seriously from the æsthetic side we may hope to get rid of this element in the etiology of pelvic disease; perhaps the Japanese alliance will work the miracle for us.

Bad hygienic surroundings are difficult to combat; the long hours of standing in shops and factories, or of sitting in stuffy sewing-rooms are not easily got rid of; here the bicycle is of more use than much professional assistance.

In the article in Clifford Allbutt's *System of Gynecology*, Dr. Barbour states the case very neatly for general treatment. He says "the importance of constitutional treatment must be fully recognised, as there is no doubt that far too much attention has been given to local treatment. In most essays on the treatment of cervical catarrh, we find pages given to local applications and to operative procedure, while general treatment is dismissed in a paragraph. This makes the local, as against the general treatment, bulk far too largely in the mind of the practitioner. While, on the other hand, it may be argued that there will always be a class of patients who are not satisfied unless something is being done directly for them, we must remember that, on the other hand, irreparable harm often results from lines of treatment which direct the patient's attention to the pelvic organs."

It is partly, one might say in great part, the impossibility of placing the woman in a healthy general state that makes so many of these cases intractable; but it must not be forgotten



that neurasthenia is not a disease of the poor only, and we must be most careful to explain to the patient exactly what we mean if we prescribe rest. Above all things, let us do nothing which may induce a habit of invalidism. A woman who is always lolling about on a sofa is a nuisance to herself and to her household. When I wish a lady to rest, I always prescribe definite times at which she must rest. There is to be no sitting in the drawing-room with the feet up on the sofa, no lounging in the evening when the husband comes home. I would banish the sofa from the drawing-room altogether. Anyone who has ever lived in a house with a valetudinarian will appreciate the force of my appeal. Let the patient then rest, let us say, for an hour before lunch and for an hour before dinner. Let the lying down be really lying down in the bedroom with the frock off, so that there is less chance of being disturbed. Many ladies come home at the last minute, scramble through their dressing, and are naturally too tired to eat or to spend a rational evening. You can advise her to do the greater part of her dressing before lying down, so that she has only to slip on her gown before dinner, and so can be rested and fresh and fit to come down to the drawing-room to receive her husband or her guests. Whatever we do, let us do nothing to encourage the loafing habit; it is bad, physically and morally. The patient to whom we prescribe rest must not be allowed to think that all work is forbidden her; make her get through a reasonable amount of walking. So-called carriage exercise may be fatiguing, but does not take the place of a brisk walk. As for the motor car, it induces an excessive appetite, making this sort of patient eat more than she can digest, and, besides, it creates an artificial excitement exhausting to the patient and otherwise undesirable.

If *complete* rest is essential, as it sometimes is in severe cases of metro-endometritis, it should be away from home surroundings, as in the so-called Weir-Mitchell treatment. Under the care of a judicious nurse, local treatment, such as douching, can be carried out thoroughly if it is really required. Massage to restore the general tone and careful dieting are all more easily obtained than in the patient's house, where she can order the servants to do what she wants.

The various substances recommended for intra-uterine application are endless in number, and I need not enumerate them. Carbolic acid seems, perhaps, still to be the favourite; some men prefer to use it diluted with an equal quantity of camphor, spirit, or some such substance. Iodised phenol,

that is, 40 grains of iodide to the ounce of pure carbolic acid, has the reputation of being a more powerful agent than pure carbolic acid, but it has the disadvantage of having a very persistent and disagreeable smell, and of being so corrosive as to damage instruments of almost any metal; it affects even gold plating. Some men tell me that they get good results with acid nitrate of mercury, but I have no personal experience of it. We were told some time ago in this room that applications of carbolic acid were one of the most prolific causes of salpingitis. I do not believe that; but be that as it may, there can be no doubt that some of the more caustic applications, such as zinc chloride, have frequently been followed by stenosis of the cervical canal. Whatever drug we use must be applied thoroughly to the endometrium, and not merely to the mucus covering it.

We must, I think, confess that local treatment by intra-uterine medication or by glycerine pads gives, at best, in many cases only temporary benefit. With the class of patient, at anyrate, that we see in our hospital dispensaries, I am more and more inclined not to prolong the treatment by local applications, but to send them early into hospital for curetting. I am aware that it has been the custom to do curettings in the Out-patient Department at the Royal Infirmary here. Until quite recently, our surroundings at the Western Infirmary Dispensary did not allow me to feel justified in doing any operative work among the outdoor patients. I am not yet quite satisfied that such an operation as a thorough curetting is a safe procedure in the case of a woman who is to be sent to a dirty home, where she can command no attention or care. I should feel afraid of septic infection, but I am sure all of us will be glad to learn from Dr. Balfour Marshall's experience. It would certainly be a great saving to the hospitals if such cases can be safely treated as out-patients, as well as a boon to the women themselves, who often have to wait for admission to the wards. Except after abortion, it is usually necessary to dilate the cervix under an anæsthetic, and it is precisely in the cases after abortion that the risk of sepsis seems to me to be greatest. Even if the women are not already affected when they present themselves for treatment, they have lost much blood and are consequently reduced in condition. However, as I said at the beginning, my object is to elicit information. Actual experience is of more value than much hypothetical argument, and I do not forget Dr. Goodell's dictum "that he is the most successful gynæcologist who is intelligently the most plucky."

But even the use of the curette is often disappointing, and I am unable to lay down any general indications for it. The pathologist can give me no help; perhaps some of the Fellows can give us some clinical rules for our guidance. Apart from the cases after abortion already mentioned, I think that a large proportion of cases suffering from hæmorrhage are benefited; beyond that I am not inclined to go. I know that some cases characterised by profuse or offensive leucorrhœa have received scarcely even temporary benefit.

*Summary.*—Every woman must be treated individually, and not as a case of endometritis.

The general health of the woman is at least as important as the local disease.

We must educate women to understand the value of care after abortions.

After labour at term, we must try to secure and maintain a thorough degree of involution, encouraging our patients to suckle their infants for a reasonable time, that is, to avoid the extremes of no breast-feeding and of over-lactation.

Injuries and displacements of the uterus are to be repaired and rectified. Tumours and other local or constitutional causes of congestion are to be sought for and treated on rational principles.

Above all things, do not let us magnify the uterine trouble in the woman's mind, and so make an invalid of her.

*Dr. Stark* said that inflammation of the mucous membrane is frequently confined to the cervix, and when there is also a laceration the lips of the everted os present granular patches, the ducts of the glands become blocked, and retention cysts form. The proper treatment in such cases is either trachelorrhaphy or amputation of the vaginal portion of the cervix, after which many of the symptoms usually associated with endometritis disappear.

It had been said that "membranous dysmenorrhœa" is an incurable disease, and that in its association with endometritis it produces sterility, but *Dr. Stark* can speak of a case in an unmarried woman which he brought before the notice of the Society a few years ago, in which complete casts of the uterus were passed almost monthly. Not only was there cure of the condition after curetting, but the patient, who is now married, is at present pregnant. That endometritis occurs in virgins is not open to doubt, but most cases are curable by attention to the general health, fresh air, and exercise. Curetting, or the application of caustics, is not only unnecessary, but may

produce much harm in such cases. In endometritis resulting from imperfect emptying of the uterus or repeated miscarriages, the only treatment which should be adopted is curetting, but it requires to be undertaken with all precautions against sepsis.

*Dr. Richmond* recommended one or two applications of carbolic acid to the interior of the uterus at intervals after curettage.

*Dr. G. Brownlie McKendrick* spoke of the value of the flushing curette, which could easily be used on the last day of menstruation, when no dilatation or general anæsthetic were required; also in the general treatment of abortion, with successful results.

*Dr. Scott McGregor* said—In the treatment of chronic endometritis, one has to discover the cause and remove it, otherwise there is no lack of treatment, and the difficulty one finds is to know what is best to employ. Local measures are in themselves essential, but one must never forget to combine constitutional remedies at the same time. My experience with regard to membranous endometritis corroborates that of *Dr. Oliphant*, and I cannot recall any individual instance of cure resulting from curetting, applying iodised phenol, or the application of electricity. In senile endometritis, however, it is with a feeling of satisfaction that one looks back on the several instances of the almost immediate relief experienced by patients following the local treatment, and I recall one instance in particular where the patient, aged 70 years, was confined to bed with this distressing complaint, the ichorous discharge producing an eczematous eruption from the labia as far down as the knees. The result of two days' treatment was at once followed by her speedy recovery. I should like to mention here the endometritis and erosion of the cervix found in young unmarried girls; leucorrhœa, backache, and painful menstruation are the symptoms that they complain of. In douching, should the nozzle of the syringe impinge against the eroded cervix, pain is experienced; curetting in such cases gives the most satisfactory results.

The menorrhagia in cardiac cases yields to curetting *pro tem*. I recollect a patient who had a marked systolic mitral murmur, with great menorrhagia. Local and constitutional treatment was adopted for a considerable time, with no marked benefit; I ultimately curetted; this was followed by

a marked improvement: she subsequently became pregnant. A friend of mine attended her in her confinement, and everything went well until the fifth day, when her pulse suddenly began to fail, and she died the following day.

Dr. Oliphant mentioned the presence of fibroids, with a recurrent high temperature. I should just like to quote a case that came under my care during the autumn of 1904. A lady, aged 65 years, had an attack of vomiting; there had been, a few days previously, a profuse offensive vaginal discharge. A few days later there followed feverish symptoms, the temperature running between 100° F. and 102° F., while the pulse was never under 100, sometimes as fast as 130, per minute; this continued for three weeks. She had a fibroid about the size of a cocoanut on the right side; the leucorrhœa ultimately disappeared, the fever subsided, and she is now quite well, but still retains her fibroid.

Dr. Munro Kerr said that in cases of purulent offensive discharge from the uterus, where curettage failed to give relief, he had obtained benefit from applications of carbolic acid to the interior of the uterus.

Dr. Balfour Marshall said that in his remarks he would exclude endometritis associated with such well-known causes as gonorrhœa, pyosalpinx, and other pelvic conditions external to the uterus. The pathology of endometritis was still obscure, there were no symptoms pathognomonic of the disease, and a diagnosis was only provisional until the endometrium, removed by curetting, was microscopically examined. Curettings should always be examined to note the pathological conditions, which varied so much.

Milder cases of so-called endometritis often yielded to remedies short of operation, *e.g.*, by the internal administration during the week preceding the menses of such drugs as hydrastis and viburnum prunifolium, or the combination of these found in liquor sedans; by improving the general health; by careful avoidance of constipation; and, locally, by hot douching and ichthyol glycerine tampons. Severer cases demanded operation, and the best results were seen where menorrhagia was a leading symptom and the endometrium hypertrophied. The results were not so often satisfactory when leucorrhœa was the main symptom.

Curettage was undoubtedly the best operation, more especially as the curette was required for purposes of accurate diagnosis as well as for treatment. It was a perfectly safe

procedure if carefully performed and carried out under rigid antiseptic and aseptic precautions. He had only had one case followed by pelvic peritonitis, and that a very mild attack and localised to one side, which was probably due to some existing tubal mischief not evident to examination, even under an anæsthetic. He had not infrequently curetted selected cases in the Out-patient Department of the Royal Infirmary, where he also curetted every case of incomplete abortion that came for advice, and he had never had a bad result. He sent the patient home to lie in bed for a week, and always saw them again within a fortnight. He contented himself with simple douching of the uterus after curetting, and considered it quite unnecessary to follow the operation by swabbings or injections of iodine, phenol, or such like.

He considered the Playfair method of treatment by swabbing the uterus, especially as commonly carried out, without thorough antiseptic precautions, a very dangerous proceeding. He had had a case of severe pelvic peritonitis some eight or nine years ago following an application of iodised phenol, and since then had quite abandoned this treatment. He had also seen a number of cases of pyosalpinx and pelvic peritonitis undoubtedly caused by such applications.

In any case, swabbing the cavity of the uterus was unsatisfactory, as it only acted on the surface, and if the mucosa were thickened, the deeper portions remained in their pathological condition.

Playfair's method, if done by those who still believed in it, should be carried out under the strictest antiseptic precautions. The cotton-covered probes should be previously sterilised, and the vagina and cervical canal antiseptically cleansed before swabbing the uterus.

In conclusion, he uttered a warning against the indiscriminate extent, he might say abuse, of curetting. He had seen numbers of cases where it was advised when quite unnecessary, and in other instances it had been done on patients with such serious complications as pyosalpinx, which had evidently not been recognised.

The *President* regretted that Dr. Oliphant had not discussed the pathology of endometritis, as it was only on the pathology that a rational treatment could be based. For the last ten or twelve years, he had quite ceased to use intra-uterine medication. In his own dispensary practice and in cases treated by others, he had seen many cases of pelvic inflammation which he attributed to this mode of treatment. It was

based on the idea that endometritis was an inflammation, but in the great majority of cases it was not so. If a case demanded local treatment, he curetted the uterus, dilating the cervix if necessary, and followed the curetting simply by a free intra-uterine douche of either sterilised saline solution or some weak antiseptic. He never followed the curettage by caustic applications to the endometrium, and he had no experience of the recurrent cases of purulent endometritis that some of the members had described.

*Dr. Oliphant* replied.

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#### GLASGOW NORTHERN MEDICAL SOCIETY.

A MEETING of the Society was held on 7th March within the Public Health Laboratory.

DR. R. M. BUCHANAN illustrated the methods of bacteriological diagnosis by a series of microscopical, cultural, and museum specimens, and by means of photographs thrown on the screen.

Under the microscope, points of diagnostic interest in connection with the microbes of diphtheria, enteric fever, tuberculosis, influenza and pneumonia, anthrax and glanders, were exhibited.

The cultures shown included—

1. A number of serum cultures as obtained from throat swabs in the routine bacteriological diagnosis of diphtheria.
2. Acid-fast bacilli as found in the tuberculosis of various animals, in animal secretions, and in milk, butter, and grass.
3. *Bacillus pestis* still living in cultures after three years.
4. *Bacillus mallei* from man and horse.
5. The fungus of ringworm and the fungus of favus.

The museum specimens demonstrated the wide range of work falling within the scope of a municipal laboratory. The diseases illustrated were plague in man and in the lower animals; anthrax in man; bovine tuberculosis; glanders in man, horse, and (experimentally) in the guinea-pig; swine fever and favus.

By means of lantern and screen the micro-organisms met with in the work of the laboratory, especially in its function of contributing to the rapid diagnosis and prevention of infectious diseases, were shown and described.

## REVIEWS.

*Medical Philology.* Gathered by L. M. GRIFFITHS, M.R.C.S.  
Eng. Part I. Bristol: J. W. Arrowsmith. 1905.

IN the course of years words often lose their original meaning by being used in new applications; and to resurrect and bring to light that meaning out of the drift of ages affords as much pleasure to the philologist, as to disinter an interesting fossil gives to the geologist. "The full history of language," says W. C. Fowler (in Cassell's Educational Course—"The English Language"), "would be a history of the human race." "The philologer," says the Danish Niebhur, "who calls departed ages back again into being, enjoys a bliss like that of creating."

Mr. Griffiths, who was on the staff of the *Bristol Medico-Chirurgical Journal*, takes a deep interest in philological matters, and has reprinted his contributions in this neat booklet of one hundred pages. The words under discussion extend from A to E, and probably the compiler will go further into the alphabet if this venture is suitably encouraged. Medical philology, it must be confessed, appeals only to a limited number, who, no doubt, find in the byeways of etymological literature their own special reward.

The origin and meaning of such words as "agnail," "ache," "blear-eyed," "bunion," "chincough," "cods," "colocynth," "dight," "disease," with many medical references and literary allusions, come in for attention and explanation. "Dight," or "dicht" (the cleansing or dressing of a wound), cannot be claimed as purely Scottish. It is here traced to an ancient English origin. Burns, who was always happy with his adaptations, says—

"The cleanest corn that e'er was dight,  
May hae some pyles o' caff in."

In the play of "Rob Roy," Bailie Nicol Jarvie causes an additional laugh when he tells the untidy landlady of the Aberfoyle Inn, who is wiping a chair for him, "You better gie your face a bit dicht when you are at it."

We have also to surrender the "haggis," which comes under "Chittalings." Mr. Griffiths says that the word was used by



Cotgrove (year 1611), and signifies "a big hogges gut stuffed with small guts cut into little pieces, and seasoned with pepper and salt." John Cuthbertson, in his glossary of "Burns," gives almost the same etymology. In discussing the "chaft-bone" (jaw), our author quotes the use of the word in the "Chyrurgerie" of Maister Peter Lowe, the founder of the Glasgow Faculty.

Mr. Griffiths informs his readers that he has written these notes on the words chiefly referred to in the "Promptorium Parvulorum" and the "Catholicum Anglium," old works and MSS., printed and issued by the Camden Society; and, it is to be hoped, he may be induced to continue this popular exposition of the philology of many old medical words and phrases still in ordinary use.

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*Elements of Anatomy and Physiology: especially adapted for Nurses.* By W. BERNARD SECRETAN, M.D. London: The Scientific Press, Limited. 1905.

THAT nurses should have some knowledge of the human body and of its physical functions must be obvious to all. It is true that ignorant females, who take up nursing duties where better-informed nurses would proceed with the greatest care, are still not unknown, especially in country towns. A volume such as this fills a gap, either as a class-book to groups of nurses who are being trained in medical institutions, or as a guide to the many amateurs referred to, who seem to think that a nurse is born, not made, and requires little special training. Whoever affects to nurse a patient with sciatica, appendicitis, or pleurisy should surely have an idea what the sciatic nerve is, that the appendix belongs to a certain region of the body, and that pleurisy is an inflammation of a certain serous membrane in the chest.

All the bones of the skeleton are well portrayed with illustrations and letterpress descriptions; and the functions of circulation, respiration and digestion, and of sensation and motion, secretion and excretion, are tersely described and illustrated.

The book is published at a cheap price, and ought to fill the place which Dr. Secretan moderately claims for it, viz., "a text-book of anatomy and physiology, simple and concise, for hospital nurses." Many of the diagrams have been contributed by Dr. Restell Thomas. The printing is good, and the binding durable.

*Asthma in Relation to the Nose.* By ALEX. FRANCIS, M.B.  
London: Adlard & Son. 1903.

THIS book forms an interesting contribution towards the investigation of a connection between asthma, in its broadest sense, and the nose.

After discussing the many theories regarding the nature and cause of asthma, the author holds that he has demonstrated a causal relationship between the nose and asthma. He advocates the theory that spasmodic asthma is caused chiefly by an unstable condition of the respiratory centre, dependent in most cases on abnormal impulses originating in the mucous membrane of the nasal septum.

Contrary to what one might expect, he says his opinion, based on results obtained, is that the prognosis as regards the permanent relief of asthma is almost in inverse ratio to the amount of trouble found existing in the nose—that is, “when there is no sign of present nasal disease or abnormality, the prognosis is good, and herein I would include all kinds of asthma.” He makes the further statement that in cases associated with mucous polypi, his best results have been obtained where the polypus have remained untouched.

By his method of treatment he seeks to restore the stability of the respiratory centre, and at the same time, as far as possible, to remove all sensory irritation capable of exciting an asthmatic paroxysm. His plan consists in cauterising the septal mucous membrane, and employing such hygienic measures, as each case suggests, to improve the general, and thereby the neurotic, condition of the patient.

The appendix consists of short notes of four hundred and two cases, in the majority of which the patient obtained “complete relief” from this treatment at the hands of the author. May we hope that others following the lines of treatment here laid down will be equally successful?

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*Studies from Institute for Medical Research, Federated Malay States.* Vol. II, No. 2: “On the Classification and Pathology of Beri-Beri.” By HAMILTON WRIGHT, M.D.  
London: John Bale, Sons & Danielsson, Limited. 1903.

IN the June (1904) number of the *Glasgow Medical Journal* we reviewed Dr. Wright's former work on *Beri-Beri*, and what we have said there applies equally well to this more recent

publication, for the views contained in the two books are precisely similar. The present work again gives us the author's classification of cases of beri-beri, as well as his theory regarding the pathogenesis of the disease; but its chief merit seems to consist in the detailed account it contains of the histological changes found in the nervous system of cases illustrating the different forms of beri-beri. This represents an amount of most laborious and painstaking work, and in itself cannot but remain as a very important contribution to the study of the disease. We note, however, that the *post-mortems* of many of the cases were made within a very few hours of the death of the patient. This, we think, somewhat modifies our interpretation of the early changes in nerves as shown by Marchi's method. In our experience nerves removed soon after death may show changes with Marchi's stain which are certainly artefacts, and which are not present in nerves that have not been removed till twenty-four hours have elapsed. Little attention, too, is paid to any increase of internodal nuclei which may have been present, and which we take it is important evidence of a degenerative change in nerve fibres.

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*Manual of Midwifery, for the Use of Students and Practitioners.* By W. E. FOTHERGILL, M.A., M.D. Third Edition. Edinburgh: William F. Clay. 1903.

THIS well-known text-book has now reached its third edition, and sustains the reputation of its author. It has been brought up to date, and several new figures have been introduced without increasing the size of the book. The most important alteration is to be found in the chapter on the development of the early ovum which, in view of the many recent advances in the subject, has been entirely re-written.

In the short description of chorion-epithelioma, which has also been added, Dr. Fothergill puts forward the view that the cause may lie in the failure of the phagocytic action, which he ascribes to the decidual cells, upon the chorionic epithelium, and the consequent invasion and continual growth of fragments of this tissue in the maternal structures.

In discussing flexion of the head at the brim in occipito-anterior positions, the author rejects both the lever theory and Lahs' theory, and states that the true cause is to be found in the lesser resistance offered to the occiput by the smooth, short anterior wall of the pelvis. A few pages further on,

however, in describing the mechanism of occipito-posterior cases, he says that, when the head is of normal size or is larger than normal, flexion occurs at the brim. He does not seem to see that this, which is quite true, is contrary to his theory.

Taken as a whole, the book is good, and can be strongly recommended to students.

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*The Practice of Obstetrics, Designed for the Use of Students and Practitioners of Medicine.* By J. CLIFTON EDGAR. Second Edition. Revised. London: Rebman, Limited. 1904.

As the first edition of this book was reviewed in the May number of this *Journal* last year, it is unnecessary now to detail the general features of the work. The favourable report given at that time has been amply justified by the rapid exhaustion of the edition. Only four months intervened between the appearance of the first and that of the second edition.

The interval having been so short, the author has not been called upon to make many alterations. About forty new illustrations have been added, the section on fever in the puerperium has been re-written and brought up to date, and the four important subjects—(1) nausea and vomiting, (2) icterus, (3) convulsions and coma, and (4) eclampsia—have been placed under the general heading of “The Toxæmia of Pregnancy.”

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*A Complete Handbook of Midwifery, for Midwives and Nurses.* By J. K. WATSON, M.D. London: The Scientific Press, Limited. 1904.

THIS is a book of 342 closely-printed pages, based largely on Professor Simpson's and Sir J. Halliday Croom's lectures. The information given is reliable, and for the most part clearly put. The general arrangement of the subject-matter is on conventional lines, and at the end there are three useful chapters on infant-feeding, gynæcological cases, and the Midwives Act.

There can be no doubt that a midwife who has mastered the contents of this volume will be conversant with the theory of midwifery, but while it is true that this should help

her to be "more ready to appreciate her own dependence on medical assistance in times of difficulty," there is still much in the book which could have been omitted with advantage. For instance, why should a midwife be taught the rules for the application of midwifery forceps?

The author seems to be rather weak in the spelling of names. Hegar appears uniformly as Hégar, Chamberlen as Chamberlain, and Lahs' theory as Lah's. There are also a few misprints, such as "stopcork" (p. 139), and "amenorrhœic" (p. 290).

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*The Transactions of the Edinburgh Obstetrical Society.*  
Vol. XXVIII. Edinburgh: Oliver & Boyd. 1903.

THERE are several interesting and instructive papers in this volume. To Dr. Richard J. A. Berry we are indebted for a valuable essay on the anatomical variations presented by two cases of twin monsters, in which he demonstrates that the liver is a mid-gut development, and that bilateral segmentation of a single ovum is unnecessary for the production of twins. This paper is profusely illustrated with plates and diagrams, and should be read by all interested in the subject of development of the human ovum.

Dr. D. Berry Hart, in an article on hydatid mole and its relation to deciduoma malignum, repeats his views of the previous year on the question as to the origin of hydatid mole, and continues the line of reasoning thus suggested in order to arrive at a possible explanation of the origin of deciduoma malignum, which in 50 per cent of cases follows hydatid mole. His suggestion is that as a result of non-development of the embryo, before the thyroid develops (fifth week), the chorionic tissues do not develop as usual, but remain undifferentiated. The syncytium and Langhan's layer thus retain their destructive activity, and may in special cases, when not cast off, destroy markedly the decidua serotina, and even penetrate the uterine wall. When a part of a mole is retained, its dangerous power lies in its phagocytic burrowing tendency, its penetration of blood-vessels, and its non-coagulant power. It thus gives rise to metastasis in blood-vessels.

Dr. Henry M. Church writes a note of warning regarding some of the risks incurred by allowing lactation and pregnancy to overlap. He gives brief notes of ten cases in illustration of these risks.

In addition to the above, there are several excellent contributions by Professor A. R. Simpson and Drs. Brewis, Lackie, Munro Kerr, Nicholson, Haig Ferguson, and others.

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*Guide to the Examination of the Throat, Nose, and Ear, for Senior Students and Junior Practitioners.* By WILLIAM LAMB, M.D., C.M. London: Baillière, Tindall & Cox. 1904.

IN this little book the author describes the normal topography and appearances of each region, and afterwards briefly sketches the commoner deviations from the normal. Suitable illustrations, original and from various sources, elucidate the text.

The author writes clearly and succinctly, and seems to have anticipated most of the difficulties likely to be met with by those beginning the study of oto-rhino-laryngology. We can thoroughly recommend the volume.

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*An Introduction to Dermatology.* By NORMAN WALKER, M.D. Third Edition. Revised and Enlarged. Bristol: John Wright & Co. 1904.

THIS book is based on the author's lectures to students in Edinburgh, and is intended to cater for the needs of a larger audience. It originally appeared in 1899, and that it has been appreciated to such an extent as calls for its reappearance twice since then does not surprise us. In its small bulk it contains a mass of information clearly put; while both type and illustrations leave nothing to be desired. The volume merits and will doubtless receive a full meed of praise from a large circle of readers.

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*New Methods of Treatment.* By DR. LAUMONIER. Translated and Edited, from the Second Revised and Enlarged French Edition, by H. W. SYERS, M.A., M.D. Cantab. London: Archibald Constable & Co., Limited. 1904.

THIS work is one which should appeal to the unfortunate practitioner who is overwhelmed with samples of drugs from different manufacturers, and worried with pamphlets describing

how efficacious certain new remedies are in a host of ailments. The volume is not a large one, though it contains much interesting matter. Its general scope will be indicated by the titles of the eleven chapters it contains, namely, nutritive alterants, blood alterants, mineral medication, respiratory alterants, renal alterants, vasomotor alterants, opotherapy, serotherapy and vaccination, nerve alterants, the antipyretics, and the antiseptics. In the first chapter, which constitutes nearly one-third of the book, the author, after some preliminary remarks on disorders of nutrition, proceeds to consider the subject of soluble albumins. He explains the stages by which albumin is converted into peptone, gives tests for the transitional forms, and discusses the use of albumoses and peptones as artificial foods. Somatose and other kindred substances are alluded to here. Organic matters containing phosphorus next come under consideration, and these include the lecithins, the nucleins, and the glycerophosphates. Among indirect alterants are phosphoric acid, cacodylic acid and its salts, disodic methylarsinate (arrhéнал), derivatives of vanadium, the persulphates, and orexine. The yeasts are also alluded to in this chapter, which is well worthy of careful study. The chapter on the blood is also of great value. Under the heading of mineral medication, we have mineralisation and demineralisation, mineralising agents, artificial serums, and the metatrophic method. The last is exemplified in the treatment of epilepsy by sodium bromide and a diet poor in chlorides. Recently discovered derivatives of morphia and local anæsthetics are considered in the chapter on nerve alterants.

This work is of a kind that is unfamiliar in recent English literature, and is admirable both in aims and in execution. The translator also deserves great praise for his excellent English version.

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*On the Sterilisation of the Hands, a Bacteriological Inquiry,*  
&c. By CHARLES LEEDHAM-GREEN, M.B., F.R.C.S. Birmingham : Cornish Brothers, Limited. 1904.

THE subject of sterilisation of the hands is not new ; but considerable attention has been drawn to it since the meeting of the British Medical Association in Oxford last year, when it was one of the questions keenly discussed in the Section of Surgery. The author may be said to have chosen the psychological moment for the appearance of the small volume

now before us. The contents bear out the sub-title, and we have the results of bacteriological investigation into the condition of the hands after the latter have been treated with various of the disinfectants now on the market.

After detailing the method of investigation—rubbing an ivory slip over the hands after cleansing while still wet, and then dropping the slip into a tube of culture-medium—the author proceeds to investigate the results of mechanical cleansing, and the values of turpentine, aqueous solutions of various antiseptics (carbolic acid, salts of mercury), of permanganate of potash, sublamin, and antiseptic soaps. He then comes to alcoholic disinfection, discusses spirit soap, and finally decides in favour of a modification of Furbringer's method.

The author concludes that alcohol surpasses all other agents in its power of sterilising the hands. This power is principally due to its property of hardening and fixing the superficial cells of the epidermis. Absolute alcohol has not so great a bactericidal action as when of strength 70 per cent. He gets the best results from the following method:—(1) Scrub with soap and very hot water (50° C.) for five minutes; (2) rub with methylated spirits for three minutes; (3) scrub for a minute or two with 70 per cent sublimata alcohol (1 in 1000); and (4) finally rub till dry and polished with a sterile cloth. Since with the imbibition of water the alcohol-hardened epithelium becomes loosened, and the hands, practically sterile immediately after the cleansing process, gradually become infective again, he recommends the wearing of impermeable gloves when the nature of the operation will permit. In an aseptic case they protect the patient: in a septic one, the surgeon. If gloves cause too great a loss of tactile sensation, then the hands may be protected from contact with septic matter by painting with a solution of hard paraffin in xylol.

The author is to be congratulated on the record now before us of long and painstaking work. If it be not utilitarian, it is at least a record of facts; and if he had contented himself with stating his results, we should find no fault with him. But when he talks of the inadmissible reference to "excellent clinical results," what does he mean? Is it not the aim of the surgeon to get a good clinical result? True, some are satisfied with results which would not be sufficient for others, and without details of such results the bald statement that they are excellent is not very valuable. But what, after all, does the author mean by "sterile"? He tells us on p. 51 that he regards all culture-tubes in which less than twenty colonies developed as "sterile"! So that, after all, the sterility



is relative only. He gets, presumably, satisfactory clinical results with a method which is not absolutely perfect; so do others, and by methods which they may claim as practically perfect. We would suggest to Mr. Leedham-Green that he should have laid more stress on what he means by "sterile." As it stands, the general reader might feel overwhelmed at the prospect of the hopelessness of sterilising his hands, and might so be led to neglect details—simple and few in number—attention to which will result in his cases following an aseptic course with as much certainty as can be predicted of anything human.

We admit that the sound practice of the art of surgery depends on the knowledge and application of the science, but we cannot submit, unreservedly, to be bound by laboratory experiments unless they hold out a prospect of practical gain.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

### MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

**Case of Transmission of Mitral Stenosis from Mother to Child.** By M. Boinet (*Bul. de l'Acad. de Méd.*, 21st February, 1905).—The mother, a healthy-looking woman of 23 years, was admitted to hospital on 24th November, 1904, with the symptoms and signs of mitral stenosis. Three years before she had had an attack of pneumonia, and since then there had been evidence of heart failure. Previous to that, however, there was nothing pointing to the presence of a cardiac lesion. Towards the end of December she seemed to contract a second attack of pneumonia, and during this illness she aborted, giving birth to a 6 months' child, born dead. At the *post-mortem*, the upper lobe of the left lung and the middle and lower lobes of the right were found in a state of red hepatisation. The liver was fatty, and the kidneys showed evidence of chronic parenchymatous nephritis. The mitral orifice was considerably narrowed, and its valve segments thickened and sclerosed. The tricuspid valve was incompetent, and also showed evidence of chronic endocarditis. Both auricles were greatly dilated. At the autopsy of the fœtus there was no appearance of disease in any of the organs, excepting the heart, where a lesion analogous to that in the mother was found in the mitral valve. There was considerable narrowing of this mitral orifice, and it presented several little fibrous nodules, each of the size of a millet seed. There was no appearance of syphilis or tuberculous disease in either the mother or fœtus; and Dr. Boinet regards the case as an example of hereditary homœomorphous transmission from the mother to her offspring.

**Aneurysm of the Aorta developing in the course of Acute Rheumatism.**—MM. Rénon and Verliac showed this case to the Société

Médicale des Hôpitaux on 3rd March, 1905 (reported in *La Méd. Moderne*, 8th March, 1905). The patient was a youth, aged 16 years, who since the age of 8 had had seven attacks of rheumatism. During six of these there had been evidence of pericarditis as well as endocarditis, and previous to the seventh there had been noted a double aortic murmur. This seventh attack of rheumatism lasted for three months, and it was during the first month that the aneurysm was seen to develop. During its growth there were frequent paroxysms of intense precordial pain. There was bulging in the second and third right interspaces; pulsation, thrill, and a double murmur to be heard over the tumour. The diagnosis was confirmed by means of the x-rays. There was no appearance, or history either, of congenital or acquired syphilis. The authors associate the aneurysm with the attacks of rheumatism, and they quote several other cases of dilated aorta in children as occurring subsequent to acute rheumatism. They conclude that in young people rheumatism may have a specially injurious action on the aorta.

**Peritonitis in Enteric Fever without Perforation.**—The following case was reported by MM. Courtois-Suffit and Beaufumé at a meeting of the Société Médicale des Hôpitaux on 17th March, 1905 (*La Méd. Moderne*, 22nd March, 1905). The signs of peritonitis appeared on the twenty-first day of illness, and their onset was sudden, just as if there had been a perforation. The peritonitis seemed to be general, but there was no great distension of the abdomen, and no absence of liver dulness. An operation was performed six hours after the onset of the symptoms, and the abdomen was found to contain two litres of a brownish-yellow, inodorous fluid, and a considerable amount of fibrinous material covering the ascending colon, the cæcum, and the lower third of the ilium. The appearances, however, suggested a peritonitis of considerably longer duration than six hours, and favoured the view that there had been a latent peritonitis for some time previous to the onset of the abdominal symptoms. There was no evidence whatever of perforation in the appendix or in any other part of the intestinal tract, and this observation was confirmed later by means of a careful *post-mortem* examination. The authors favour the view of infection by contiguity through the intestinal wall, rather than by means of the general circulation.

**Three Cases of Lobar Pneumonia Complicated with Cholecystitis.** By J. M. Anders (*Amer. Med.*, 18th March, 1905).

CASE I was a typical attack of pneumonia in a woman, aged 58, with consolidation confined to the upper and middle lobes of the right lung. Jaundice developed on the fifth day of illness, and on examination of the liver its lower margin was noted to be somewhat lower than normal. There was also a pear-shaped enlargement of the gall-bladder to be made out, with marked tenderness on pressure. The urine contained a considerable amount of bile pigment. Death supervened on the eighth day of illness, but was apparently due to cardiac failure, with œdema of the lungs. The jaundice became very well-marked before death.

CASE II was a woman, aged 40, and the consolidation involved the middle and lower lobes of the right lung. Slight jaundice was noted on the sixth day of illness, and at the same time a pear-shaped tumour, tender to palpation, in the region of the gall-bladder. The jaundice increased up to the eighth day, when the crisis came, and soon after the jaundice and other symptoms indicative of cholecystitis slowly disappeared.

CASE III was a man, aged 50. He had a typical attack of lobar pneumonia, and the crisis occurred on the ninth day of illness. He had no jaundice, but on the sixth day he complained of pain and soreness in the region of the gall-bladder, and on examination a distinct pyriform tumour, tender to the touch, was made out in that area. The liver was slightly enlarged, and tender on palpation of its lower margin. The signs and symptoms of cholecystitis gradually subsided following the occurrence of the crisis.

Dr. Anders believes that the infection of the gall-bladder in these cases

comes from the intestinal tract, and not by direct extension through continuity of tissue from the lung. In some cases, however, it may be by the blood or lymph stream. But in such cases as the above the cholecystitis is by no means a serious complication, for it does not seem to materially modify the course of the pneumonia, and, indeed, no general or constitutional symptoms distinctive of catarrh of the gall-bladder need be recognisable. The jaundice which was present in two of the cases was probably obstructive in character, due to catarrh of the bile ducts. And the consensus of opinion seems to be that jaundice complicating pneumonia is always obstructive in origin, and not due to hæmolysis as some have asserted.

## SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

**Fractures of the Radius in Starting Automobiles.** By F. B. Lund, M.D., Boston (*Boston Med. and Surg. Journal*, 3rd November, 1904).—The occurrence of a fracture of the radius close to its lower articular surface has been described by Lucas Champonniere and others, and in this paper Lund describes very clearly the manner in which it seems generally to be produced. He describes, also, the clinical appearances and course of the condition, as illustrated by three instances which have come under his own immediate notice. Shortly put, it may be said that the fracture is caused by "back kick" of the starting handle which, instead of becoming automatically thrown out of gear with the first propulsive ignition and explosion of the gasoline or other agent, is driven back with the full power of the engine instantaneously and violently in the opposite direction, twisting the hand backward with such force as to tear off the lower end of the radius. It seems to be due, mainly, to premature explosion of the spark, ignition taking place while the piston is still moving up, and is specially likely to lead to fracture if the handle is being pushed, rather than lifted, past the compression.

Such an injury should not occur if due precautions are taken, particularly if the spark lever be set in the position called "retarded," i.e., so that the explosion takes place only after the connecting-rod has passed the centre. Also, it is unlikely to take place if the handle be lifted, rather than pushed, past the compression.

In the production of the fracture there is the violent backward twist, but not the impacting force which enters into the etiology of the ordinary Colles' fracture. There is, therefore, no impaction or splintering. The hand is wrenched backwards, and the articular surface torn away by the ligaments at the wrist, commonly just about the base of the styloid process. The line of fracture is clean and transverse, and the displacement slight and easily corrected.

Union is rapid, the treatment is simple, and the absence of impaction or destruction of the posterior portions of the fragments allows of union, occurring, as a rule, without deformity or resultant stiffness of wrist or fingers.

Champonniere, who speaks of this fracture as one due to pure avulsion, corrects any displacement which may be present at once, and uses no retaining apparatus, early movement and massage being, in his experience, attended by marvellous success.

Lund prefers, however, to support and immobilise the wrist by a splint, leaving the fingers entirely free for movement from the first. Passive and active wrist movements are practised each time the splint is removed or adjusted. The results of this treatment seem to have been quite satisfactory.

In young subjects, it is noted, there may be separation of the lower epiphysis instead of actual fracture.

**A Slipping Cartilage in the Knee-Joint.** By Edmund Owen, F.R.C.S. (*The Practitioner*, February, 1905).—There is much practical value, as well as interest, in this paper. It seems to have been suggested to Mr. Owen by the general attitude of many of the candidates in a recent London University surgery examination. A question was set on the subject of the symptoms and treatment of injury to the semilunar fibro-cartilages of the knee, and Mr. Owen was struck by the "light-hearted, even casual" manner in which some of the candidates approached the operative part of the treatment.

The following may be said to summarise Mr. Owen's views upon the anatomical details, the palliative treatment, and operative procedures of the condition.

The external cartilage is comparatively seldom, almost never, displaced, while the internal one is pretty often set adrift in greater or less degree. The explanation of this is probably to be found in the comparatively loose fixation of the external cartilage, which is able, therefore, to follow the head of the tibia and the external condyle of the femur in all movements, the internal one, however, being fixed not only in front and behind, but also along its convexity to the internal lateral ligament. The result is that it is much more likely to be caught, squeezed, or torn away in sudden or unusual wrenches or other movements of the joint.

*Palliative treatment*, in Mr. Owen's opinion, ought to get fair trial, and in many cases will accomplish nearly all that is necessary, if not all that might be wished. He gives an illustration of a suitable form of splint which, while checking rotation, allows free flexion and extension of the joint. This splint should in the first instance be worn whenever the risk of the movement of sudden rotation of the head of the tibia is likely to be run. Later on, when the patient has learned to keep a constant watch against irregular movements of the leg and foot, he may be able to dispense with its use to a large extent, but must always wear it when taking active exercise, such as golf, riding, dancing, &c.

Football, hockey, cricket, and the like, must be given up altogether; and *there is*, undoubtedly, "the rub," for in so many cases it is just in such exercise that the lesion is produced, and Mr. Owen rightly enough remarks upon the pluck and disregard for possible damage so often showed by the athletes of to-day who, sooner than give up their habits and pastimes and resign themselves to carefully restrained habits of life, will rather brave the possibilities and risks of an operative procedure which cannot, by any thinking surgeon, be put forward as quite devoid of danger.

As Mr. Owen points out, there is, as regards the knee-joint serous sac, practically "no margin of error," and in this there is marked contrast between it and the large serous sac of the peritoneum, where, often enough, considerable quantities of micro-organisms may be safely left to be dealt with by its inherent anti-microbic powers. In the knee there is, for practical purposes, no such margin. What the explanation of this may be is not clear, but Mr. Owen incidentally suggests one explanation. The skin surface over the knee-joint is at very short distance from the serous lining, and sebaceous glands and ducts in the region of an operation incision may very possibly furnish the infective focus or track which will lead to dire effects in the joint.

*Operative treatment*, therefore, should never be lightly entered upon. The patient should have the facts and possibilities clearly laid before him or her, and not only the preparation for the operation, but also every detail in its execution should be subjected to the most painstaking and searching care. Here, if anywhere, asepsis is imperative, and it is well that the surgeon responsible should trust no one but himself for the execution of the essentials in its attainment. Mr. Owen employs the vertical incision internal to the patella in opening the joint. The steps of the operation are not novel. The only point worthy of special remark is that he drains the joint for twenty-four hours by tube. On the seventh day, the surface stitches are removed, a collodion dressing is applied, and a leather splint (moulded to the knee prior to the operation) is applied. A day or two later, the patient is allowed up.

The functional result in Mr. Owen's cases, as in the experience of most surgeons nowadays, is practically perfect. The cases that go wrong, however, are not so few in number as to warrant any "light-hearted and casual" adoption of operative treatment.

## DISEASES OF CHILDREN.

By JOHN WAINMAN FINDLAY, M.D., F.F.P.S.G.

**The Pathogenesis of Icterus Neonatorum.** By Dr. Eugène Leuret (*Arch. de Méd. des Enfants*, 1905, No. 3, pp. 129-136).—This author has investigated 35 cases of icterus neonatorum, also numerous children, healthy and otherwise, as controls. He advocates a modified hæmatogenous theory of causation, and adduces considerable evidence to support his view. Leuret believes that, as the result of a general chilling of the body, a laking of the blood—a destruction of red blood corpuscles—occurs. Very soon after this the skin assumes a wine-red colour (the "pre-icteric or red stage"), the result of staining by the dissolved hæmoglobin; the tissues then convert this free hæmoglobin into less oxidised pigments, which later on cause the skin to assume the jaundiced tint. The normal colour is restored only when the altered blood pigments are all eliminated, this taking place through the kidney.

The blood serum was examined on thirty-three occasions, and never once, at any period of the illness, was a frankly positive Gmelin's reaction obtained. Seven times, just prior to the development of the jaundice, the blood serum was found to hold in solution a large amount of hæmoglobin, this being visible to the naked eye and to the spectroscope. When jaundice had declared itself, the blood serum was found to be coloured yellow; as the jaundice abated, the serum became decolourised. In three cases of icterus neonatorum Leuret failed to find, after death, bile in any of the fluids of the body, and the liver appeared perfectly normal. Bile pigment was never found in the urine; during the "pre-icteric or red stage" the urine became charged with yellowish-red pigments, phosphates, and urea. These urinary pigments are related, by their chemical reactions, to the uroseine of Nencki and Sallet, and may be regarded as bodies of the same series as hæmoglobin, though less oxidised.

Two objections may be raised against the acceptance of the above view—viz., if laking of the blood causes jaundice, why does jaundice not occur in cases of hæmoglobinuria? and why do we not observe hæmoglobinuria in cases of icterus neonatorum? Leuret replies that jaundice is a symptom of hæmoglobinuria on which we have not sufficiently insisted, but which nevertheless exists. However, in hæmoglobinuria the jaundice is often of mild degree, and it is suggested that this difference may be due to the different mode in which the two affections originate; thus, icterus neonatorum is accompanied by a peripheral vaso-dilation, which allows the superficial tissues to be bathed by the laked blood, whereas paroxysmal hæmoglobinuria is accompanied by an intense peripheral vaso-constriction, which perhaps puts the integuments relatively in the shade as regards impregnation. The absence of hæmoglobinuria in icterus neonatorum may be explained by the reducing action of the tissues and kidney on the free hæmoglobin. Moreover, to produce hæmoglobinuria, it is necessary to have a considerable number of red blood corpuscles destroyed—one-sixth of the total number—and this destruction must occur rapidly. These conditions probably are not generally realised in icterus neonatorum; but, let the laking of the blood become sufficiently intense, and we will have infantile hæmoglobinuria, as Winckel has described under the name of "pernicious afebrile icteric cyanosis with hæmoglobinuria."—J. W. F.

**Sudden Deaths in Children** (*British Journal of Children's Diseases*, March, 1905, vol. ii, No. 3, pp. 105-115).—In a paper on the above subject, Dr. Charles Macalister calls special attention to a form of sudden and very fatal illness, which he, as a medical man interested in institutions devoted to the care and keeping of children, has had peculiar opportunities of studying. The children, previously in good health, are usually suddenly attacked by some slight intestinal or pulmonary irritation, and death occurs always most unexpectedly. In some instances the child has retired to rest, merely complaining of slight headache, only to be found dead in bed a few hours later. The children frequently look as if they had been asphyxiated, and at the *post-mortem* examination some bronchial catarrh, a small pneumonic patch, or congestion and oedema of the lungs may be detected. No definite etiological factor, as a rule, can be discovered; but in one institution which contained 200 boys, and where many of these peculiar deaths occurred, the mode of bathing the children aroused suspicion. In this instance all the children were bathed on the same day in the same plunge-bath, which contained about 3,000 gallons of water. This was considered insanitary, and the bathing arrangements were altered, the boys being bathed on three days of the week, and before entering the plunge-bath they were cleaned with soap and water. As a result, the death-rate, which for the previous five years had been 2·8 per cent, fell to zero, only 1 death having occurred in this institution during the last four years.

Dr. Macalister is of the opinion that this wholesale bathing in the same water so polluted it, that the children absorbed some virulent toxin which poisoned the respiratory centre, and that the slight inflammatory changes in the lungs, discovered *post-mortem*, were not the primary cause of death. Drs. Ernest Glynn and J. C. Matthews, in an investigation which they made ("On Bacteria in Public Swimming Baths"), estimated that each bather shed about six thousand million bacteria; consequently Macalister calculated that the number of organisms in the above bath of 3,000 gallons would rise to ninety thousand per c.c.—L. F.

**Surgical Causes of Sudden and Unexpected Death in Children** (*The Polyclinic*, April, 1905, vol. ix, No. 4).—Mr. Tubby, in a clinical lecture on the above subject, makes some interesting remarks on the use of carbolic acid and iodoform in surgery. He states that washing-out of the pleural cavity always gives rise to shock, and that, especially if solutions of carbolic acid are used. He advises the employment of bland solutions—*e.g.*, saline—for this purpose, and refers to some experiments which he has performed on animals. When sterilised water was injected there occurred a slight fall in blood-pressure, which, however, was rapidly recovered from, but when only a small quantity of either iodine or carbolic acid solution was introduced into the pleural cavity, there resulted a fall in blood-pressure which was rapid and fatal. He also remarks that he has seen in children a wet carbolic acid compress, applied preparatory to operation, cause "acute erythema, vesication of skin, gangrene, and death from suppression of urine." Iodoform, he affirms, children stand badly, and poisoning has resulted from its use, particularly when injected into the bladder.—L. F.

## NERVOUS DISEASES AND INSANITY.

By L. R. OSWALD, M.B.

**Histological Studies on the Localisation of Cerebral Function.** By Alfred W. Campbell, M.D. (*Journal of Mental Science*, October, 1904).—In this paper Dr. Campbell gives a short account of an attempt to localise cerebral function by histological methods. He has studied

minutely the normal arrangement of cell layers in man, and has confirmed the results of this investigation by the examination of pathological material.

The cortex of two anthropoid apes and of several of the lower animals has been similarly treated.

Taking the subject as a whole, there are two varieties of centres in the human brain—(1) Centres for movement, and for common and special sensation; and (2) centres controlling the psychic functions that are distinctly human.

Histological examination shows that the motor area is confined to the pre-central gyrus. Confirmation of this has been obtained by examination of the cortex in cases of amyotrophic lateral sclerosis and in seven cases of amputation of extremities, pathological changes being limited to the same region.

The sulcus cruciatus of the lower animals is not homologous with the central fissure, the former lying in the midst of the motor area, whereas the latter bounds it. The "compensatory ansate" fissure of lower animals is probably the homologue of the fissure of Rolando, and a small fissure in the paracentral lobule of man and apes the equivalent of the sulcus cruciatus.

The author's histological studies seem to support the suggestion made by Dr. Hughlings Jackson, that movement is represented at three different levels, and that the motor area, as above described, is concerned only with simple movements—such as progression. Skilled movement is represented in an area immediately in front of this, the "intermediate pre-central" region, which includes the motor centres for speech and writing. The anterior boundary of this area agrees very closely with that of the motor area as mapped out by experimenters and by Flechsig. The remainder of the frontal lobe is divisible histologically into two regions—frontal and pre-frontal. The latter shows great paucity of cells; this, and the fact that it is inexcitable, and that its destruction causes no functional defect, affords proof that it is the last part of the pallium to be developed, and the author suggests that its evolution is incomplete.

The functions of the frontal lobe cannot be determined histologically. It is a significant fact, however, that its cortex is more extensive in man than in the ape; and the reason why it shows wasting in cases of dementia may be simply because "it is built up on an extremely weak and collapsible framework of nerve fibres."

The cortex of the ascending parietal gyrus differs markedly from that of the ascending frontal, and is regarded as the main terminus for sensory impressions because—(1) its fibres become myelinated relatively early; (2) degenerations affecting the sensory pathway have been traced to this gyrus; and (3) the author has found in three cases of tabes that there are profound changes limited to the ascending parietal cortex, especially on the Rolandic wall.

Adjoining the "post-central" is the "intermediate post-central" area, which may serve for the reception of the more complex components of common sensation, and the author is inclined to think that the area for common sensation may come to be divided into different centres like the motor area.

Between this sensory area and the visual area is a region "which may serve for the further elaboration and interpretation of impressions primarily received by the various sensory areas." And whether or not the frontal and parietal lobes have the same high function, the author points out that "both undergo equal expansion in the progress of phylogenetic development," a fact which he has seen illustrated by certain cases of idiocy.

In conclusion are briefly indicated what the author believes to be the exact distribution of the areas of sight, hearing, taste, and smell.—M. B. H.

**Syndrome Cérébelleux et Syndrome Bulbaire.** By André Thomas, Lab. de Prof. Dejerine (*Rev. Neur.*, January, 1905, No. 1).—The patient was a woman, aged 58 years, who was admitted into hospital in May, 1898. Her health previous to the onset of the illness had been good, except

that she suffered from headaches. She had had two miscarriages, and a child died aged 15 days. Her husband died young.

The illness began in 1886 as a progressive crossed paralysis (right limbs and third left cranial nerve). The hemiplegia subsequently improved, but the oculo-motor paralysis persisted. Iodide was at this time prescribed, but the patient did not take it.

In 1897 there supervened vertigo and disturbance of equilibrium, and, probably at the same time, paralysis of the left fifth nerve (anæsthesia of the face) and intentional tremor of the head and arms, most marked in the right arm.

On admission (May, 1898) there was marked loss of power in the right arm and leg. On the right side the knee-jerk was exaggerated and ankle clonus obtained. There was anæsthesia of the left side of the face, and partial anæsthesia of the right lower limb; incomplete paralysis of the third left cranial nerve; vertigo on standing or moving; disturbance of equilibrium; and tremor of the head and arms, especially of the right arm.

In August, 1900, the following symptoms were noted in addition:—Loss of power was most marked in the right lower limb; both knee-jerks were exaggerated, especially the right one; Babinski's phenomenon was present; the left pupil was rather more dilated than the right one, and fixed; and disturbance of equilibrium was very marked, and was exaggerated during attacks of vertigo.

Between August, 1900, and January, 1901, the patient became worse, and was in bed for several months. She could neither stand nor sit, on account of vertigo and loss of equilibrium. Intentional tremor of the right arm was very marked, and there was nystagmus during extreme lateral movements of the eyes. The fundi were normal.

In March, 1901, it was noted that hearing was diminished on both sides, especially on the left, and that bone conduction was also defective.

In July, 1901, the right lower limb was very weak, and was slightly atrophied, especially in the gluteal region; pain was complained of along the course of the right sciatic nerve, and tremor had lessened in the right arm.

In December, 1901, there was paresis and intentional tremor of the arms, and paresis of the lower limbs.

The patient died in June, 1903. Latterly she was confined entirely to bed; she became "wet and dirty," and slept almost continuously. During the last fortnight of her life the left cornea ulcerated, and vision in this eye was lost.

At the autopsy there were found a softening in the medulla, several small circumscribed areas of sclerosis, diffuse meningitis, and a recent softening in the spinal cord.

The softening in the medulla was old, and was seen on the left side in a section at the level of the junction of the lower third with the upper two-thirds of the olives. It had destroyed the lateral reticular formation, the descending root of the fifth nerve, the inferior extremity of the restiform body, and the upper extremity of the nucleus of Monakow. The olive was not involved. The lesion was bounded in front by the inferior olive; behind, by the upper end of the nucleus of Burdach; internally, by the internal arcuate fibres; and externally, by a thin band of white matter. It extended upwards for only a very short distance.

The other two lesions—of less importance—were small areas of sclerosis: one on the left side, in the central tract of the tegmentum; the other on the right, at the superior extremity of the nucleus of the facial, behind the upper olive. There seemed to be also a patch of early sclerosis on the left vestibular nerve in its intramedullary course.

The softening in the cord had caused degeneration in both crossed pyramidal tracts, especially the left. This, along with an intense leptomeningitis, had caused degeneration also in the direct cerebellar tract and in Gowers' tract. All the periphery of the cord was slightly degenerated. The medullary softening caused degeneration in the restiform body, which could be traced



to the cerebellum—where it terminated in the corpus dentatum, the cortex of the worm, and the nucleus globosus and nucleus emboliformis.

Below the lesion there was almost complete degeneration of the fifth root, of the lateral reticular formation, of the direct cerebellar tract, and of the tract of Gowers; but descending degeneration here became indistinguishable from ascending degeneration due to the spinal lesion. The olives were not degenerated, but cells were very few in number in the reticular formation and in the nucleus of Monakow immediately below the lesion.

The presence of a softening in the medulla, and of secondary degeneration in the cerebellum, explained, in great part, the disturbance of equilibrium, a slight tendency to fall to the left, and, perhaps also, vertigo. The same lesion, interrupting the descending root of the fifth nerve, explained the anæsthesia of the same side of the face. The patch of sclerosis in the central tract of the tegmentum might contribute towards the production of loss of equilibrium, because, by its connection with the olives, this tract is indirectly connected with the cerebellum. Paralysis of the third nerve, and a facial paralysis coming on at the end, with ulceration of the cornea, were probably due to exudation round the cranial nerves. The Gasserian ganglion was normal.

The cause of the right hemiplegia was looked for in vain. It was probably due to a vascular lesion, which may also have caused the vertigo. The cause of the intentional tremor was still more obscure.

This case is interesting as showing how lesions of the medulla—if they affect cerebellar fibres or their nuclei of origin—may cause disturbance of equilibrium like cerebellar lesions; and also as showing the connection between certain nuclei of the medulla (that of Monakow and those of the lateral reticular formation) with the cerebellum, and particularly with the worm and the nuclei globosus and emboliformis.

Syphilis was undoubtedly the cause of the medullary softening—the appearance in the vessels and meninges were characteristically syphilitic—as it is also occasionally the cause of multiple sclerosis.

Microscopical examination of the spinal cord and peripheral nerves will form the subject of a future paper.—M. B. H.

## PUBLIC HEALTH AND INFECTIOUS DISEASE.

By HUGH GALT, M.B., C.M. GLASG., D.P.H. CAMB.

**On the Relationship of the Pseudo-Diphtheria to the Diphtheria Bacillus.**—In the current number of the *Journal of Hygiene* there is an article by G. F. Petrie, M.D., describing two series of experiments carried out with a view to throwing further light on the question. Dr. Petrie points out that various observers have recorded somewhat conflicting results after experiments with regard to powers of agglutination, &c. Dr. Petrie's experiments were performed with the purpose of determining whether substances are present in pseudo-diphtheria filtrates which, when inoculated into animals in large amounts, lead to the production of antitoxin serum for diphtheria toxin. The experiments were carried out in two directions:—

1. By adding varying quantities of pseudo-diphtheria filtrates to toxin-antitoxin mixtures.
2. By immunising horses with large quantities of the filtrates, and examining the serum afterwards for antitoxin.

The results of the experiments as a whole, employing no fewer than eleven culture races, combine to justify the opinion:—

1. That no substances capable of neutralising diphtheria antitoxin are present in filtrates of pseudo-diphtheria bacilli.

2. That the results of the immunisation of horses with large quantities of the filtrates makes it apparent that they do not contain substances capable of stimulating the production of an antitoxin to diphtheria toxin.

Dr. Petrie concludes that the probability of the two organisms standing in close relation to each other is diminished by the results of his experimental investigation.

**An Improved Method of Calculating Birth-rates.**—An interesting paper on this subject is contributed by Arthur Newsholme, M.D., and T. H. C. Stevenson, M.D., in the current issue of the *Journal of Hygiene*. The authors point out the steady declension in the general birth-rate of England and Wales from 36.3 per thousand of population in 1876 to 27.9 in 1904. These figures are approximately correct for Scotland also.

The authors propose in the present article—(a) To indicate the fallacies underlying the ordinary method of statement of birth-rate; (b) to describe an accurate method of stating the birth-rate. They also propose to discuss, in a subsequent paper, the results obtained under (b).

The errors necessarily present in the computation of the ordinarily expressed *crude birth-rate* are sufficiently obvious, as it neglects the age distribution of child-bearing females. Examples are given showing the powerful effect of this factor.

Briefly, the authors propose to divide the married females of a community into quinquennial age-periods, and apply to this the "fertility-rate" at each period. This fertility-rate is, of course, much greater in the early stages of the child-bearing period. The authors also show that any convenient fertility-rate may be chosen, as it is merely a measure of favourable or unfavourable age distribution. Unfortunately this rate cannot accurately be stated in this country, as the census returns only give ages in decennial age-periods after the age of 25.

The chief points in the summary are as follows:—

1. The ordinary method of calculating the birth-rate does not distinguish between the influence of fertility and of variations in conditions of the population as to age and marriage.

2. In ascertaining the true meaning of the great reduction of the birth-rate which has occurred in the last twenty-five years, it is necessary to have means for distinguishing between the accidental and the intrinsic causes of change.

3. A step in the right direction is made when the legitimate births are stated in terms of the married women at child-bearing ages, and the illegitimate births in terms of the unmarried women of the same ages.

4. This method fails to correct for the difference of fertility of the various ages comprised in the age-period 15-45.

5. By obtaining corrected fertility-rates, the fertility-rates of different communities can be made directly comparable.

6. In the present paper a method is described of obtaining factors, which, when applied to the readily available crude birth-rates, correct completely both for the varying proportion of married women in compared populations, and for the varying fertility at different periods of married life.

## DENTAL SCIENCE.

By W. D. ANDERSON, F.F.P.S.G., L.D.S.

**Influence of Growth of Bone on the Arrangement of Teeth.** By J. G. Turner, London. Read at Fourth International Dental Congress (*Dental Cosmos*, January, 1905).—Mr. Turner suggests that the normal orderly arrangement of teeth is due to the normal growth of bone, and,

as a corollary, that most deformities of the dental arch are a consequence of disordered growth of bone. He points out that the occlusal surfaces of the three permanent maxillary molars when first laid down are set so as to face backwards. With the growth of bone backward the teeth become erupted, with the occlusal surfaces facing downward. He goes on to show that in a normal mouth the milk teeth about 5 to 6 years become spaced out as the normal growth of bone progresses. In cases, however, where adenoids are present, this growth of bone is retarded, hence such phenomena as "open bite" take place, due to the growth, more especially downward, being arrested. In support of adenoids being the cause, he points out that if they be removed, the teeth which cut later, occupy a wider and, what should have been, the normal arch.

**A Study of Certain Questions Relating to the Pathology of the Teeth.** By W. D. Miller, Berlin. Read at Fourth International Dental Congress (*Dental Cosmos*, December, 1904, and January, 1905).—After premising that most scientific and practical minds accept the chemico-parasitical theory of caries as being fairly satisfactory, the author goes on to refer to the views held by Black, Tomes, and others, regarding "hard" and "soft" teeth, viz., that chemical analysis shows the difference in lime salts in these two varieties to be so exceedingly slight as to make it of no account in considering caries; hence we must look more to environment than to the teeth themselves. Miller does not quite accept this view, as he holds it is not the quantity of lime salts but their stable chemical combination which is important, while admitting the difficulty of examining the latter characteristic. Still, he does not think the resistance of the teeth themselves to acids should be put aside as of no consequence, and after going fully into the question of environment, by many experiments he confirms and adds to our present knowledge of the action of saliva (acid or alkaline), fermentation of food stuffs, action of fats, &c. The more novel portion of the paper is then reached, viz., the action of acids on "hard" or "soft" teeth.

For purposes of experiment, teeth of a strong yellow type were chosen as the hard variety, and young white, or bluish-white teeth (already slightly carious), as the soft. Sections of dentine from these were exposed to weak acid solutions, got by the fermentation of food stuffs and saliva. The results of these experiments led him to the conclusion that there is a difference in the rapidity with which dentine from different teeth is acted upon, the difference being in favour of so-called hard dentine, this difference not, however, being so great as to confer immunity on the one, while the other falls a prey to caries.

The action of acids on enamel is then gone into, but no very definite point is reached as regards hard and soft teeth, the summing up being that the enamel of the teeth of different people, as well as the different teeth of the same person, shows a difference in resistance to the action of acids. The difference, however, is not so great as to lead to the conclusion that it is a predominating factor in caries.

In his experiments on the enamel, the following points are brought out:—

1. That the enamel cuticle proves a protecting agent in preventing decalcification.

2. That enamel has a protecting crust, a fraction of a millimetre in thickness; if this be removed mechanically, the action of the acid is much more rapid.

Lastly, the influence of a tooth's vitality on the progress of caries is looked into. The disputed point as to whether any changes of an active form take place in the formed dentine, as distinguished from the secondary or protective dentine, is answered in the affirmative by referring to the increased transparency so often accompanying caries in teeth with living pulps. This transparent area is found by experiment to resist the action of acid for a longer period than the normal dentine, so that the vitality of a tooth is of importance. Practically the same results are shown by secondary dentine.

*Books, Pamphlets, &c., Received.*

- A Reference Handbook for Nurses**, by Amanda K. Beck. London : W. B. Saunders & Co. 1905. (5s. net.)
- The Rôle of Modern Dietetics in the Causation of Disease**, by J. Sim Wallace, M.D., D.Sc., L.D.S. London : Baillière, Tindall & Cox. 1905. (2s. 6d. net.)
- A Text-Book of Medical Chemistry and Toxicology**, by James W. Holland, A.M., M.D. Fully Illustrated. London : W. B. Saunders & Co. 1905. (15s. net.)
- Nothnagel's Encyclopædia of Practical Medicine** (Saunders' English Edition). Diseases of the Blood, by Prof. Dr. P. Ehrlich, Dr. A. Lazarus, Prof. K. von Noorden, and Dr. F. Pinkus. Edited, with Additions, by Alfred Stengel, M.D. Authorised Translation. London : W. B. Saunders & Co. 1905. (21s. net.)
- A Treatise on Plague**, dealing with the Historical, Epidemiological, Clinical, Therapeutic, and Preventive Aspects of the Disease, by W. J. Simpson, M.D. Cambridge : The University Press. 1905.
- Manual of Diseases of Children**, by James Burnet, M.A., M.B. Edinburgh : E. & S. Livingstone. 1905. (6s. 6d. net.)
- Reports from the Laboratory of the Royal College of Physicians**, Edinburgh, edited by Sir John Batty Tuke, M.D., and D. Noël Paton, M.D. Vol. IX. Edinburgh : Oliver & Boyd. 1905.
- The Practice of Medicine : A Text-Book for Practitioners and Students**, with special reference to Diagnosis and Treatment, by James Tyson, M.D. Third Edition. Thoroughly Revised, and in parts Rewritten. With 134 Illustrations, including Colored Plates. London : Rehman, Ltd. 1905. (24s. net.)
- Fièvres Eruptives**, par B. Auché, H. Surmont, L. Galliard, R. Wurtz, J. Grancher, A. Netter, L. Thoinot. Avec 8 Figures intercalées dans le texte. Paris : Librairie J.-B. Baillière et Fils. 1905.
- Mucomembranous Enterocolitis**, by Paul Froussard, M.D. Edited by Dr. Edward Blake. London : Henry J. Glaisher. 1905. (2s. 6d. net.)
- Alcoholic Poisoning and Degeneration**, by Prof. G. Bunge, M.D. London : A. Owen & Co. (6d. net.)
- Mucous Membranes, Normal and Abnormal**, including Mucin and Malignancy, by Wm. Stuart-Low, F.R.C.S. London : Baillière, Tindall & Cox. 1905. (2s. 6d. net.)
- Methods of Morbid Histology and Clinical Pathology**, by J. Walker Hall, M.D., and G. Herxheimer, M.D. Edinburgh and London : William Green & Sons. 1905.

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 20TH MAY, 1905.**

	WEEK ENDING			
	April 29.	May 6.	May 13.	May 20.
Mean temperature, . . .	46·0°	48·5°	50·5°	54·8°
Mean range of temperature between day and night, . .	25·6°	31·5°	25·9°	32·8°
Number of days on which rain fell, . . . . .	4	4	2	0
Amount of rainfall, . . ins.	0·76	0·24	0·13	0·00
Deaths registered, . . .	328	294	327	301
Death-rates, . . . . .	21·1	18·9	21·1	19·4
Zymotic death-rates, . . .	2·3	2·9	3·3	2·8
Pulmonary death-rates, . .	7·2	7·2	5·6	5·5
DEATHS—				
Under 1 year, . . . . .	84	73	70	66
60 years and upwards, . .	66	56	58	56
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	15	15	26	21
Scarlet fever, . . . . .	1	2	2	1
Diphtheria, . . . . .	1	2	3	1
Whooping-cough, . . . .	18	16	20	18
Fever, . . . . .	...	3*	1*	...
Diarrhœa, . . . . .	6	5	4	11
Croup and laryngitis, . .	...	2	1	...
Bronchitis, pneumonia, and pleurisy, . . . . .	74	70	54	49
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup, . . . . .	8	17	9	13
Erysipelas, . . . . .	10	29	24	12
Scarlet fever, . . . . .	34	20	26	16
Typhus fever, . . . . .	5	3	2	1
Enteric fever, . . . . .	5	4	4	8
Continued fever, . . . .	...	..	...	...
Puerperal fever, . . . .	8	1	5	1
Measles,† . . . . .	301	487	486	398

\* 1 Typhus.

† Measles not notifiable.

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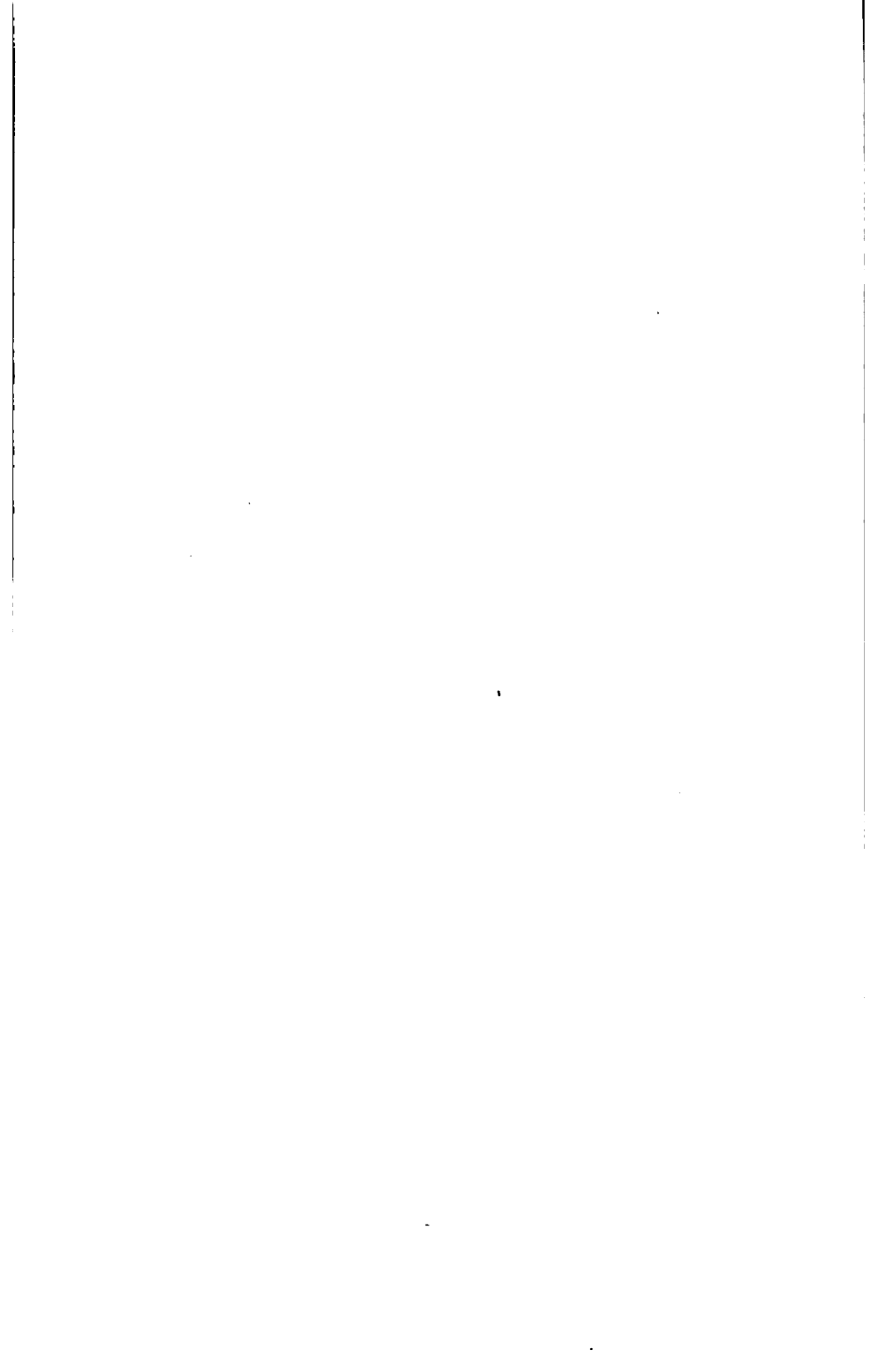
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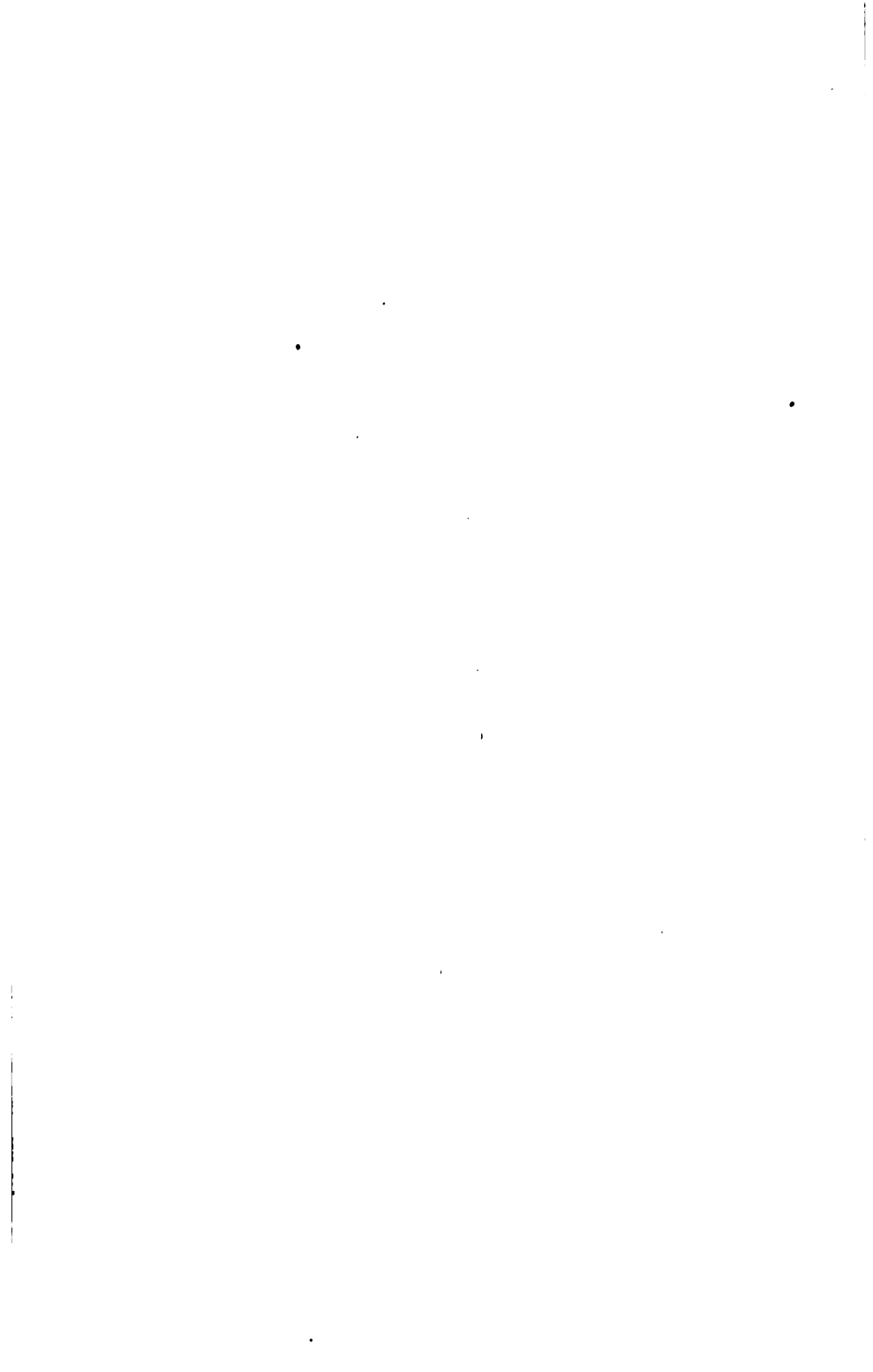
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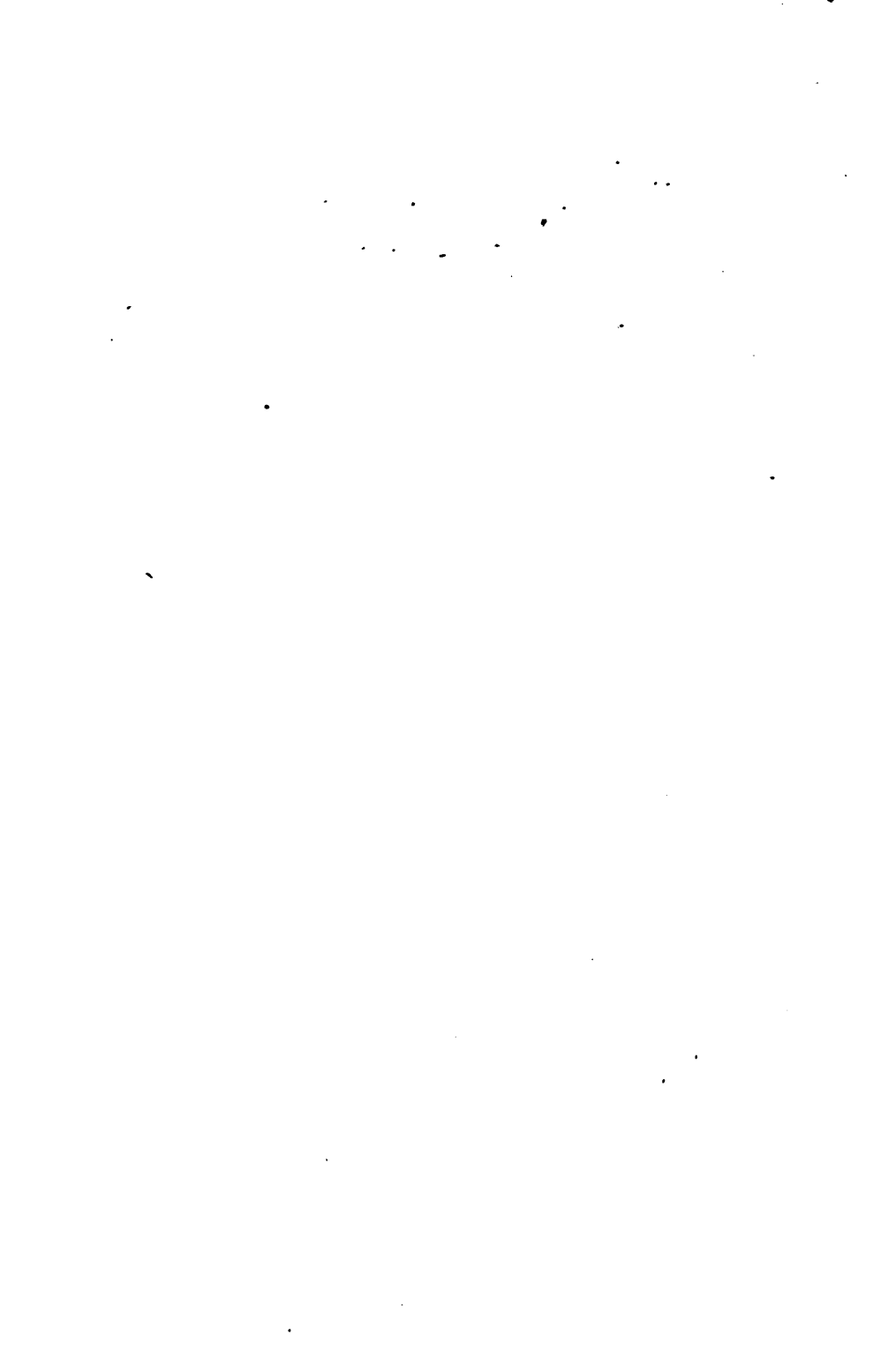
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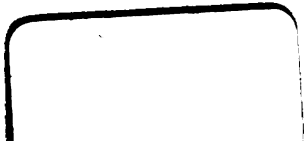






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